S. HRG. 102-5 (Pt. 13)

NATIONAL ENERGY SECURITY ACT OF 1991

(Subtitle A of Title IV)

HEARING

BEFORE THE

SUBCOMMITTEE ON
ENERGY REGULATION AND CONSERVATION

OF THE

COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

ONE HUNDRED SECOND CONGRESS

FIRST SESSION

ON

S. 341

TO REDUCE THE NATION'S DEPENDENCE ON IMPORTED OIL, TO PROVIDE FOR THE ENERGY SECURITY OF THE NATION AND FOR OTHER PURPOSES

MARCH 21, 1991

PART 13

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NATIONAL ENERGY SECURITY ACT OF 1991

(Subtitle A of Title IV)

THURSDAY, MARCH 21, 1991

U.S. SENATE,
SUBCOMMITTEE ON ENERGY REGULATION
AND CONSERVATION,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:17 p.m., in room SD-430, Dirksen Senate Office Building, Hon. Timothy E. Wirth, presiding.

OPENING STATEMENT OF HON. TIMOTHY E. WIRTH, U.S. SENATOR FROM COLORADO

Senator WIRTH. If the committee could come to order.

I thank you all very much for being here. I was just talking to Mr. Helland and our opening witnesses, and they agreed that we might ask Mr. Tugwell, Ms. Bleviss, and Mr. Sklar to come up and join us at the table and we can do this in one panel, if that would be all right with you. It was fine with Mr. Helland and DOE. Mr. Helland, thank you very much.

We are here essentially to discuss the export of renewable energy and energy efficiency technology. Presumably, in a hearing like this one of the major agencies involved in U.S. economic activity overseas is the Agency for International Development. We had invited them and they had accepted.

Unhappily, I gather that something happened on the way to OMB to AID today, and they cannot be with us, which is too bad. One would assume that the export of energy efficiency technologies and exports in general would be in the interests of the United States, but perhaps we will find out why AID could not come and why OMB apparently has a problem with this whole construct.

That is something that we will be looking into later and is not the topic of today's hearing directly.

Mr. George Helland is the Deputy Assistant Secretary for Export Assistance at the Office of International Affairs in the Department of Energy. Mr. Helland, you are here with your colleague, Mr. Bowes.

Mr. James Berg is the executive vice president of the Overseas Private Investment Corporation, or OPIC. Mr. Berg, thank you very much.

And Mr. Bowes is the Director of the Office of Technical Assistance, Conservation and Renewable Energy, in the Department of Energy.

Gentlemen, what I would like you to do, if you might, would be to summarize your statement perhaps in a 5-minute period of time, and we will put on the timers here. Unfortunately we are here, as you might have read in this morning's Washington Post, at a time when everything happens at once. I think I have had 13 hearings yesterday and today. Of course, I have been in attendance at every one, listening to all of the testimony. But that happens to us.

And what we will do is, if this is okay, is to include your statements in the record, perhaps listen to both DOE and OPIC, and then ask Mr. Tugwell, Ms. Bleviss, and Mr. Sklar to present their testimony and perhaps reactions to what you are saying, and get something of a discussion going and see if we can telescope this process.

Mr. Helland, thank you very much. We appreciate your being here. Thank you very much. Welcome to Washington as well.

[Prepared statements from Senators Wirth and Wallop and the text of subtitle A of title IV follow:]

Statement of the Honorable Timothy E. Wirth
CORECT Hearing
March 21, 1991

The Committee will explore today the promotion of U.S. renewable energy and energy efficiency technology exports. I believe that these exports are an important component of a comprehensive national energy strategy.

Recently, a group of industry experts reported to the Agency for International Development that over the next 20 years the market for energy technology in the developing nations will approach $300 billion and may be as high as $900 billion. Unquestionably, the developing nations cannot realize their ambitious economic goals without adequate energy technologies to assist in that growth. The United States, should be encouraging energy development and taking advantage of those opportunities for exports.

We have many lessons to share with our friends abroad. First, that energy development should be clean to avoid the problems that come with polluted land, water, and air. Second, that in many cases, modular, small-scale renewable energy technologies can have enormous economic benefits for developing countries. And finally, that energy development should be guided by the simple but wise principal of conservation and efficiency. Terrific development policy can be found in the confluence of good energy policy and good environmental policy. And out of this perspective, a new way of looking at our trade policy may arise.

Unfortunately, there is an enormous disconnect between the export of clean energy technologies such as renewables and efficiency technologies and the current export programs of the United States. In fact, our share of the renewable energy market is estimated to have dropped from 20 percent of global renewable exports in 1970, to only 10 percent today. The Germans and the Japanese have stepped in aggressively to take our place as primary exporter of these technologies.

Despite the fact that we export more than $500 million worth of renewable energy technology and products annually, much more can and should be done. Renewable energy is a perfect fit with the needs of many developing nations, where remote non-grid connected power is imperative. Moreover, wasted energy and inefficient energy resource use exacerbates the pressures on other natural resources -- notably forests and other areas that are increasingly being denuded for fuel wood. In summary, the opportunity for clean energy is great, the imperative is greater. And as I have maintained in the past, exports of renewable and efficiency energy technologies and products must be an integral part of an energy policy crafted by the Senate Energy Committee.

Most energy observers recognize the importance of strengthening U.S. export programs for renewables in order to promote domestic technology development and take on the rapidly emerging competition from overseas. I believe the CORECT program of today is not up to this enormous task. In my view, this program is under-funded, under-staffed, and under-emphasized. Moreover, I believe that we should explore whether the CORECT program needs to be expanded to encourage exports of energy efficiency technologies and products. This is difficult given the diverse nature of the energy efficiency industry -- but I believe that it can be done. And finally, the CORECT program must reach out and find partners in the private and non-profit sectors, who will help us make the development of renewable energy and energy efficiency technology exports an urgent priority for the nation.

I hope that our witnesses will speak frankly and let us know their impressions of the bill's language regarding CORECT -- and where the language can be improved, expanded, and strengthened so that the United States can take advantage of this enormous potential market. Thank you. The record will be open for a week to allow further elaboration of your oral statements.

Statement of
Senator Malcolm Wallop (R-WY)
Subcommittee on Energy Regulation and Conservation
Senate Committee on Energy and Natural Resources
March 21, 1991

COMMITTEE ON RENEWABLE ENERGY AND TRADE
PROVISIONS OF THE
NATIONAL ENERGY SECURITY ACT OF 1991

Mr. Chairman, today's hearing focuses on initiatives contained in S. 341 to strengthen the mandate of the Committee on Renewable Energy Commerce and Trade (CORECT) so as to foster the deployment of commercially viable renewable energy technologies in lesser developed countries. Also under consideration is the establishment of overseas offices by CORECT in the Caribbean and the Pacific Rim to promote technology transfer and authority to provide expanded training of foreign nationals in energy efficiency and renewable energy technologies.

Since its establishment in 1976 by this Committee in the Energy Policy and Conservation Act, CORECT has supported a modest program designed to promote the export of renewable energy and energy efficiency technologies overseas. The current program bolsters the United States' international competitiveness through the gathering and dissemination of information to American manufacturers on potential overseas business opportunities.

These provisions are consistent with the President's National Energy Strategy which speaks to promoting energy technology exports, particularly to Eastern Europe and developing countries. Through such efforts the United States' competitiveness can be enhanced, and there is considerable room for improvement in this regard. We are a part of a complex and interdependent energy dependent world. Recognizing this interdependence is essential to the success of efforts to enhance global energy security. CORECT can play a small but important role in this regard.

Mr. Chairman, I am looking forward to today's testimony on this important initiative.

II

102D CONGRESS
1ST SESSION

S. 341

To reduce the Nation's dependence on imported oil, to provide for the energy security of the Nation and for other purposes.

IN THE SENATE OF THE UNITED STATES

FEBRUARY 5 (legislative day, JANUARY 3), 1991

Mr. JOHNSTON (for himself and Mr. WALLOP) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

---

A BILL

To reduce the Nation's dependence on imported oil, to provide for the energy security of the Nation and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be referred to as the "National Energy Security Act of 1991".

* * * * * * *

TITLE IV—RENEWABLE ENERGY

Subtitle A—CORECT

SEC. 4001. DUTIES OF CORECT.—Section 256 of title II, part B, of the Energy Policy and Conservation Act is amended by striking subsection (d) and inserting the following in lieu thereof:

"(d)(1) DUTIES.—There shall be established an inter-agency working group (hereafter in this subsection referred to as the Committee on Renewable Energy Commerce and Trade (CORECT)) which, in consultation with the representative industry groups and relevant agency heads, shall make recommendations to coordinate the actions and programs of the Federal Government to promote the export of United States renewable energy and energy efficiency products and technologies. The Secretary of Energy shall be the Chairman of such group. The heads of appropriate agencies may detail such personnel and may furnish such services to such working group, with or without reimbursement, as may be necessary to carry out its functions.

"(2) ADDITIONAL DUTIES.—CORECT shall promote the development and application in lesser-developed countries of renewable energy and energy efficiency resource technologies that—

"(A) promote more efficient use of fossil fuels;

"(B) reduce dependence on the importation of fossil fuels by encouraging the use of sustainable biomass, wind power, hydropower, solar, geothermal and other renewable energy and energy efficiency resource technologies;

"(C) foster rural and urban energy development and energy self-sufficiency through the use of reliable

and economical renewable energy and energy efficiency resource technologies;

"(D) explore mechanisms for assisting in the domestic manufacture, particularly by small business manufacturers, of energy efficiency and renewable energy resource technologies, for export; and

"(E) increase staffing to support the new authority and responsibilities described in this section.

"(3) TRAINING AND ASSISTANCE.—In furthering the purposes of this section, CORECT shall—

"(A) provide aggressive in-country technical training for local users and international development personnel;

"(B) provide financial assistance to support nonprofit institutions designed solely and specifically to support the efforts of domestic renewable energy and energy conservation companies to market their products, and to develop environmentally responsible projects in developing nations;

"(C) establish feasibility and loan guarantee programs to facilitate access to capital and credit; and

"(D) support, through financial incentives, private sector efforts to commercialize and export renewable energy and energy efficiency resource technologies.

"(4) OUTREACH.—CORECT may establish renewable energy industry outreach offices in the Pacific Rim and in the Caribbean Basin for the purpose of providing information concerning renewable energy and energy efficiency technologies and industries of the United States to governments, industries, and others outside of the continental United States.".

SEC. 4002. INFORMATION AND TECHNICAL PROGRAM.—Section 256(c)(2)(D) title II part B of the Energy Policy and Conservation Act is amended by striking clause (ii) and inserting in lieu thereof the following new clause:

"(ii) information on the specific energy technology needs of lesser-developed countries, the technical and economic competitiveness of various renewable energy and energy efficiency resource technologies, and the status of ongoing technology assistance programs shall be provided. Information from this program shall be made available to industry, Federal and multilateral lending agencies, nongovernmental organizations, host-country and donor-agency officials, and such others as the Secretary deems necessary.".

SEC. 4003. COMPREHENSIVE ENERGY TECHNOLOGY EVALUATION.— Section 256 of title II, part B, of the Energy Policy and Conservation Act is amended by adding at the end new subsections (e) and (f) as follows:

"(e)(1) Not later than June 1, 1991, and biennially thereafter, the Secretary shall prepare and submit to Congress a report evaluating the range of energy efficiency and renewable energy technologies available to meet the energy needs of developing countries. This report also shall provide information on the specific energy needs of lesser-developed countries, an inventory of United States technologies and services to meet those needs, and an update on the status of ongoing bilateral and multilateral technology assistance and renewable energy resource programs.

"(2) The report also should include an evaluation of current programs, their priority in meeting program objectives, and recommendations for future programs that—

"(A) develop and promote sustainable use of indigenous renewable energy resources in lesser-developed countries;

"(B) given the credit and capital restrictions in lesser-developed countries, focus on technologies that are both appropriate and economically viable;

"(C) meet the needs of lesser-developed countries for energy rather than creating new needs, in order to ensure immediate income-generating use of the power generated;

"(D) work with local individuals to assure that programs and projects meet specific national and local needs;

"(E) use indigenous materials and associated hardware, wherever possible, in order to reduce costs and ensure project duplication;

"(F) provide examples of cost-effective systems and applications for in-country non-governmental organizations and project technical personnel;

"(G) provide mechanisms for assisting United States manufacturers, particularly smaller manufacturers, of energy-efficiency and renewable energy technologies, in exporting their goods and services;

"(H) expand technical and administrative training programs, as well as distribution of multilingual technical training manuals and related materials; and

"(I) examine the potential for using economic incentives to promote technology transfer, such as shared savings contracts, loan guarantees, and tax incentives, to lesser developed countries.

"(f) AUTHORIZATIONS.—(1) There is authorized to be appropriated for purposes of carrying out the programs under sections (d) and (e) $10,000,000 for fiscal year 1992, including $2,000,000 to carry out the purposes of subparagraph (d)(2), and such sums as may be necessary for fiscal year

1993 and 1994 to carry out the purposes of this subtitle except for subparagraph (d)(4).

"(2) There is authorized to be appropriated for the purposes of subparagraph 256(d)(4), in addition to the amount specified in the previous sentence, $2,750,000 for fiscal year 1992, and such sums as may be necessary for fiscal years 1993 and 1994.".

* * * * * * *

STATEMENT OF GEORGE A. HELLAND, JR., DEPUTY ASSISTANT SECRETARY FOR EXPORT ASSISTANCE, OFFICE OF INTERNATIONAL AFFAIRS AND ENERGY EMERGENCIES, DEPARTMENT OF ENERGY, ACCOMPANIED BY RONALD W. BOWES, DIRECTOR, OFFICE OF TECHNICAL ASSISTANCE, CONSERVATION AND RENEWABLE ENERGY

Mr. HELLAND. Thank you, sir.

Having sold products for many years around the world——

Senator WIRTH. I think you will also have to pull the high-tech microphone over closely.

Mr. HELLAND. High-tech microphones have to be pulled forward.

Senator WIRTH. It does not work very well. It is like much of the Senate.

Mr. HELLAND. That was your statement, Senator.

Senator WIRTH. Thank you very much.

Mr. HELLAND. Having sold products around the world for a long time, I find that renewable energy is just an incredibly desirable product to sell. It is clean, it is cheap, it is nonpolluting, it is available in small sizes, and it requires a relatively small infrastructure.

But selling it has a number of major problems. It is nontraditional. People do not like to change. While the operating costs are low, the initial installation costs may be substantial. The suppliers tend to be small companies, maybe startup companies.

And while the U.S. market is substantial, we need the export market to get a broader base. But when we go into the export market, we find foreign competition who brings to bear subsidized project identification, subsidized feasibility studies, and subsidized financing.

In that environment, we have an interagency organization known as CORECT to support the foreign trade in these renewable energy technologies. The trade is conducted by the private sector. We are doing what we can do to help those private sector companies.

Working through the member agencies, we provide education and information. We provide market development assistance. We provide assistance in financing. We provide help in getting together export trading companies.

The proposed legislation has a number of aspects to it. The Department of Energy supports the general objective of increasing renewable exports, there is no question about that. We have difficulty, however, in the idea of expanding CORECT beyond its service to renewable energy technologies because we feel like it would dilute its activities.

For example, if we extend it to energy efficiency we can look at all sorts of markets that are entirely different from those addressed by CORECT. If we extend it to clean coal technology, we are looking at an entirely different set of users, an entirely different set of suppliers, an entirely different set of problems.

That is not to say that an organization similar to CORECT could not do those things quite well. But we do not think they properly belong as part of CORECT.

The loan guarantee and feasibility study programs should be done, but not as part of CORECT. There are other agencies in the

Government already doing that. We think, for the same reasons, the establishment of outreach offices is not the business of CORECT. There are offices in the Federal Government already that can do that work.

Finally, we find that the present level of funding as proposed in the 1992 budget does permit CORECT to perform the duties it needs to do now.

Thank you, sir.

[The prepared statement of Mr. Helland follows:]

Statement of George A. Helland, Jr., P.E.
Deputy Assistant Secretary for Export Assistance
U.S. Department of Energy

Committee on Energy and Natural Resources
Subcommittee on Energy Regulation and Conservation
United States Senate

March 21, 1991

Mr. Chairman and members of the Subcommittee, I am pleased to have this opportunity to present the Department of Energy's views on S. 341, the National Energy Security Act of 1991, with particular reference to Title IV, Subtitle A, regarding the Committee on Renewable Energy Commerce and Trade (CORECT).

As background, I would repeat some of the points made by Assistant Secretary J. Michael Davis in his testimony to the full Committee on Energy and Natural Resources on February 26, 1991:

> Public comment received during the development of the National Energy Strategy revealed virtually unanimous support for renewable energy resources for environmental and energy security reasons.
>
> The analysis of those comments led to important conclusions. First, renewables can play a larger role in our energy economy. Second, we can accelerate the growth in renewable supplies over the next forty years without resorting to permanent subsidies or mandates. This is true because the technical breakthroughs have been made; in a favorable environment, U.S. industry can easily make the improvements that are now required.

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"Adding renewable technologies to the menu of available energy choices can contribute to a growing economy -- domestically, by spurring competition and innovation, and internationally, by providing new products and technologies for export and contributing to the balance of trade. . . As we succeed with renewable technologies in the U.S., we will enable the rest of the world to benefit from energy that is not subject to boundaries or control by others."

Let me turn now to a discussion of CORECT.

CORECT is composed of 14 Federal agencies, collectively working to facilitate foreign trade in renewable energy and energy efficiency and to encourage secure, diversified, environmentally clean energy. It has proven to be an effective example of interagency cooperation. The agencies involved are:

The Department of the Interior,
The Agency for International Development (AID),
The Department of Energy (DOE),
The Department of Commerce (DOC),
The Export-Import Bank (EXIM),
The Department of State (DOS),
The Department of the Treasury (DOT),
The Department of Defense (DOD),
The United States Trade Representative (USTR),
Overseas Private Investment Corporation (OPIC),
Small Business Administration (SBA),

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United States Information Agency (USIA),
Environmental Protection Agency (EPA), and
United States Trade and Development Program (TDP).

The role of CORECT is to mobilize and focus the diverse resources of government agencies, working in concert with trade organizations and industry, to promote the export of U.S. goods and services in the relevant fields. This requires bridging the gap between U.S. technology and foreign demand to enhance U.S. competitiveness in the global marketplace. CORECT takes a pro-active approach to assure a U.S. leadership role in renewable energy in the future.

CORECT provides education and information. It brings together industry, donor organizations, financing sources, and customers. Rather than creating a new organization, CORECT maximizes and leverages the existing services of a number of government agencies. It also funds a limited number of specific programs where it uniquely can capitalize on particular opportunities.

CORECT is divided into five subcommittees conducting activities in their respective specialty areas: Education Subcommittee, chaired by AID; Market Development Assistance, chaired by the DOC; Trade Policy, chaired by USTR; Technical Competitiveness, chaired by the DOE; and Finance, chaired by the DOE.

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Each of CORECT's member agencies has a contributing role. While the different agencies may have slightly different agendas, the synergy created results in greater results than would the sum of individual agencies's activities. The technologies logically come from DOE. The development role of AID, the market development roles of DOC and USTR and TDP, the financial roles of OPIC and EXIM, and the EPA's interest in the world environment combine effectively into a national effort.

In serving the renewables industry, there are two major problems we must recognize:

First, renewable energy companies are often small. Some do not have the knowledge (or in some cases the capital) to perform the feasibility studies necessary to launch their technology into a new market. Many do not have the administrative know how necessary to deal with the complexities of individual Federal support programs. CORECT works to provide those resources to the American firms working in that arena.

Project financing is a second problem. Renewables are still viewed as being somewhat risky and thus are not usually looked upon favorably by financial institutions. Moreover, even though many renewable technologies have very favorable life-cycle cost characteristics, they may not win in competition with established technologies that have lower up-front costs. The generally smaller and more dispersed nature of many renewable projects makes financing them less attractive to the large multilateral banks and other development institutions.

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It would be helpful to look at the markets addressed by CORECT. The U.S. market for renewable energy technology is promising. Due to their geographical characteristics and infrastructure problems involving energy distribution, overseas markets also present opportunities for adoption of renewable energy technologies. CORECT assists industry in accessing those overseas markets. The overseas market is a big one: developing countries represent a potential electricity market of $100 billion annually and have estimated demand growth rates of 7 per cent per year. High value markets exist for renewable energy technologies in the world now. But more important, obtaining the technological and market experience that will support a leadership role in the energy resources of the future can only be gained if we are serious players in today's existing markets.

Developing countries need energy to fuel economic growth. Conventional power generation schemes are often not well matched to the requirements of developing countries, which lack the managerial skills to support the complex systems inherent in modern central power plant and grid technology. These countries can often use renewable energy power plants in dispersed configurations to meet their requirements. So doing also reduces their dependence on imported oil.

Worldwide environmental problems provide another impetus to the use of renewable energy sources. Nowhere is this more clearly demonstrated than in the nations of Eastern Europe where energy efficient and environmentally sound energy systems are quickly becoming important CORECT targets. Although CORECT's near-term emphasis has been on the developing world, this explains

why it is now expanding its efforts to include the nations of Eastern Europe. Not only is CORECT there to respond to the countries' needs, it also addresses the important U.S. outreach to Eastern Europe.

CORECT's marketing efforts are addressed, then, to two fronts: developing markets for emerging technologies where the technologies are currently most cost-effective, and strengthening the U.S. renewable energy industry.

CORECT's initial actions were concentrated in two areas: publicizing the technology, since consumers and international aid/trade agencies were unfamiliar with these relatively new technologies; and market development concentrating on the Caribbean, Latin America, and the Pacific Rim. Now let me review some of our more recent activities.

CORECT is currently working with the U.S. Export Council for Renewable Energy (ECRE), the trade group that serves as the CORECT interface with industry, on the FINESSE project -- FINancing Energy Services for Small-scale Energy Users. This program identifies renewable energy markets in developing countries and the financing required to exploit them. The small-scale financial packages required are bundled into larger portfolios that will attract the interest of the multilateral banks. FINESSE proposes to use intermediary organizations to take large loans from donor organizations and re-lend the funds to the smaller renewable energy projects. The World Bank has expressed support for this project, which will allow it to support development loans that would otherwise have prohibitively high overhead. CORECT is working with the World Bank to create a trust fund of as much as $3 million for this purpose.

7

FINESSE is hosting a workshop this fall in Kuala Lumpur, Malaysia, to bring together governmental, financial, and industry officials from Southeast Asian countries and from the U.S. to discuss these new business and financing concepts for small-scale renewable energy projects. In preparation for this workshop, six business concepts for targeted countries in the Pacific Rim have been funded and developed.

CORECT has already been successful in increasing the funding available for project financing to support renewable energy projects. At AID, a Project Preparation Facility has recently been created for project identification, assessment, and implementation. Also, the Global Environmental Facility, created through the World Bank and the United Nations Development Program, will shortly be providing a $1.5 billion fund to address environmental problems worldwide, with a significant role for renewable energy.

The One-Stop Application for Financial Assistance provides a service to exporters of renewables and results from CORECT's interagency role. AID, EXIM, OPIC, and TDP have agreed on a single financial application form that allows renewable energy firms to apply simultaneously for applicable funding from all these agencies and includes information about other finance programs available through the SBA. Renewable energy firms are often small and have limited resources; this interagency cooperation helps the industry get access to all the available pre-feasibility, feasibility, and project financing without exceeding its administrative capabilities.

8

Another success story was last year's creation of an export trading company for geothermal energy under the Export Trading Act of 1982. This export trading company frees the individual companies within the industry from antitrust sanctions while cooperatively working overseas, and it is critical in putting together the large-scale resources needed to compete internationally. AID and the Department of Commerce led this effort, with the assistance of the Justice Department. The company has since bid collectively on a major geothermal project in the Philippines. (The customer has not yet made a decision on this project.) The formation of this export trading company is another example of the enormous potential for teamwork between CORECT member agencies.

CORECT also sponsored a successful trade development activity. A team of industry and CORECT representatives from the Department of Commerce and the DOE labs visited Indonesia and the Philippines in June, 1990. This visit was followed by a more detailed research effort by an industry team which uncovered numerous immediate and near-term sales and licensing opportunities for U.S. renewable energy equipment and services. As a result of this effort, the potential for expansion of energy supplies from local resources has been substantially increased in these two countries. This research effort will culminate in a major international conference sponsored by CORECT and the renewable energy industry in Los Angeles in October, 1991.

In 1991, CORECT and its member agencies are continuing their aggressive efforts to address unfair trade practices. The U.S. is engaged in negotiations within the OECD to further restrict the use of tied aid. With

the support of CORECT member agencies, Congress last year renewed the Ex-Im Bank's tied aid war chest; and for 1991, it provided $150 million to counter the distorting trade effects of tied aid by other countries. The use of these funds will help U.S. renewable companies compete on a technological basis, rather than merely on financing.

Title IV, Subtitle A, of S. 341 would expand CORECT's duties far beyond its original intent. It would add all conservation technologies to CORECT's portfolio, which may dilute its past focus on renewable energy. It will also change the mix of U.S. industries that CORECT will need to assist, bringing in many large electrical and appliance manufacturers who do not have the same small-business characteristics and needs as most of the renewable energy companies. It would also expand CORECT's role in the actual marketing of products and the performance of market studies. Overseas representation should be left to existing Federal promotion programs and to industry or its agents, since they are the ones who need to gain the experience for their future success. The Administration believes that CORECT should maintain its current focus on coordination, and that its funding levels should remain in roughly their current range. Particularly objectionable provisions in title IV(A) are discussed below.

We oppose the additional duties and increased staffing proposed in section 4001 as a revision to EPCA section 256(d)(2). DOE supports energy conservation R&D in virtually every industry, and expanding CORECT to include energy conservation technologies would eventually turn it into a generic industrial-promotion organization, duplicating existing Federal organizations.

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Staffing increases should not be legislated under any circumstance: CORECT has done very well with its current staff, which is lean and efficient. If some staff additions are needed to address new CORECT initiatives within its current mission, they can be made without need of legislation mandating more staff.

DOE should not duplicate the loan guarantee and feasibility study programs already operated by other Federal agencies. In the past several years CORECT has made excellent progress in making the existing programs more accessible to small businesses, which was one of its original mandates. Establishment of new programs, with all their concomitant overhead, would be wasteful.

It would be inappropriate for CORECT to establish "outreach offices" overseas, and it is likely to be counterproductive for legislation to specify where such offices would be located. It is general Administration policy that industries must arrange for their own overseas sales offices or marketing agents. CORECT, or preferably non-profit groups that it funds such as US-ECRE, could play a coordinating role among industry in the establishment of such agents' offices, but the agents should be directly funded and managed by industry consortia, trade groups, or similar institutions. Federal agencies and national laboratories can provide indirect support for such trade activities without any new legislation. Any training to be provided to customers of U.S. companies must be the responsibility of industry. Making customer training into a Federal role would establish a very bad precedent.

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The proposed $10,000,000 authorization level for CORECT's main functions is inconsistent with CORECT's needs. The proposed authorization of $2,750,000 to pay for the costs of overseas industry sales offices is objectionable.

Within DOE, the recent creation of the Office of Export Assistance in the Department's Office of International Affairs and Energy Emergencies elevates the importance of energy exports. It is aimed at improving all DOE export promotion efforts by bringing oversight activities together into one office. Rather than having the technical orientation which dominates most DOE activities, this is an office with a marketing orientation. It provides direct interaction with high-level officials within the DOE and in other agencies in the government, permitting departmental programs to take better advantage of the resources of those other agencies in promoting energy exports.

We have spent a large amount of the taxpayers' money over the years on developing renewable energy technologies. Industry has done the same. The United States renewable industry enjoys leading positions in photovoltaics, solar thermal, wind power, and geothermal energy. These technologies are increasingly competitive in appropriate applications, and helping industry to aggressively commercialize them is CORECT's responsibility.

CORECT continues to have a role in strengthening our domestic renewable energy industry, despite some very strong foreign competition, through increasing its business base by opening foreign markets. Today, the U.S. renewable industry is comprised of over two thousand firms. Most of these are small businesses.

We are proud of the fact that renewable energy exports have grown six-fold since CORECT's inception -- from approximately $75 million in 1984 to over $450 million in 1989. While it would be wrong to say that CORECT is responsible for that growth in sales (the companies are), I believe that the U.S. industry would have had a significantly harder time reaching the current level of exports without CORECT's assistance.

That concludes my comments, and I would be happy to take questions.

Senator WIRTH. Mr. Helland, thank you very much. I appreciate your being here.

Mr. Berg.

STATEMENT OF JAMES D. BERG, EXECUTIVE VICE PRESIDENT, OVERSEAS PRIVATE INVESTMENT CORPORATION

Mr. BERG. Thank you very much, Mr. Chairman.

With your permission, I would like to take the first of my 5 minutes and give you a very brief explanation of the Overseas Private Investment Corporation. OPIC is a corporation wholly owned by the United States Government. As such, we are a small Federal agency. We have about 140 people. We have been an independent Federal agency for 20 years now, since 1971.

Our programs originated with the Marshall Plan after World War II and our oldest, most mature product line is political risk insurance, which has been used creatively, I believe, by our Government for many years as a way to encourage American private investors to participate in economic growth and development overseas through direct foreign investment.

In its existence OPIC has issued about $35 billion of political risk insurance globally and we have a loss rate, a net loss rate on that, of .08 percent. So we, through salvage operations, et cetera, have been able to certainly recoup any losses and also support quite a number of American businesses.

Right now we operate in 118 countries overseas. We have an outstanding amount of political risk insurance that aggregates to just over $9 billion at present, making us second in the world to the Japanese famous MITI organization in issuing political risk insurance.

We also have a finance program where we can bring debt capital directly to project finance on a limited recourse basis. We have a financing portfolio right now of about $1 billion.

OPIC is a money-making organization. Last year we had a net income or profit, it would be said if we were in the private sector, of $143 million. That money is kept by the Treasury Department and helps to reduce the deficit.

In the area of the export of renewable energy technology, OPIC has worked from the beginning with CORECT and we have had an opportunity to participate with CORECT and the other member agencies in a number of their programs. OPIC has supported the U.S. renewable and energy conservation industry through several geothermal exploration and energy projects worldwide. We have been able to bring political risk insurance and financing to those projects, and we will intend to continue to do so.

Finally, I would say that, in light of the testimony that has been provided by the Energy Department here, we would agree that the current organizational structure of CORECT and its mandate are ones that we have worked with extensively and intend to continue to work with and believe we can do so in a very good way without changing that particular mandate.

So I would just end the summary there, Mr. Chairman, and state my appreciation for being able to be here.

[The prepared statement of Mr. Berg follows:]

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STATEMENT OF JAMES D. BERG
EXECUTIVE VICE PRESIDENT
OVERSEAS PRIVATE INVESTMENT CORPORATION

BEFORE THE
SUBCOMMITTEE ON ENERGY REGULATION AND CONSERVATION
COMMITTEE ON ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

MARCH 21, 1991

Mr. Chairman and Members of the Subcommittee:

Thank you for the opportunity to testify at this hearing concerning U.S. Government programs designed to facilitate the export of U.S. renewable energy and energy efficiency technology.

In my testimony I will describe OPIC's mission and its programs, which are designed to complement the mandates of the other agencies represented on this panel. I will then summarize OPIC's experience with the renewable energy industry and its role in the Committee on Renewable Energy Commerce and Trade (CORECT). After stating our views on relevant sections of the pending legislation, S. 341, the National Energy Security Act of 1991, I will conclude with a description of some new OPIC initiatives that could further enhance the competitive position of the U.S. renewable and energy conservation industry in international markets.

OPIC is a self-sustaining corporation of the U.S. government that promotes and otherwise facilitates U.S. private investment in developing countries and emerging democracies. We operate our programs in 118 countries throughout Latin America, Africa, Asia and Central and Eastern Europe. Our programs consist of political risk insurance, project finance and investment development services.

OPIC political risk insurance provides U.S. investors with protection against the risks of currency inconvertibility, expropriation and political violence. Our project finance provides non-recourse lending to foreign enterprises involving significant equity participation by U.S. companies, and includes both direct loans of up to $6 million per project and loan guaranties of up to $50 million per project. The direct loan program is reserved for small and medium-sized businesses and our insurance program is well-utilized by the small business community.

OPIC's investment development services provide U.S. companies with a hands-on introduction to overseas investment opportunities through investment missions, investor information services and a computerized Opportunity Bank that links U.S. investors to prospective local joint venture partners.

Fiscal year 1990 was a very successful year for OPIC. On a worldwide basis, OPIC facilitated $7 billion in total

investment last year, issued $2.9 billion in insurance, committed $230 million in direct loans and loan guaranties (its full lending authority) and earned a record net income of $143 million. These investments are projected to result in U.S. trade and balance of payments benefits of $1.5 billion, as well as more than 18,000 person-years of U.S. employment during their first five years of operation. We are proud to say that we accomplished this with a staff of fewer than 140 employees, about the same number as when we were first established as a corporation in 1971.

Because of our small size, we are able to respond with rapid and full deployment of our resources to new opportunities and Administration priorities. For example, during fiscal 1990 under the leadership of our President and Chief Executive Officer, Ambassador Fred Zeder, OPIC initiated programs in Poland, Hungary and Eastern Germany, led four investment missions to Central and Eastern Europe and facilitated, with insurance and/or financing, more than $260 million in new U.S. investment in the region. We have also played a signficant role in reintroducing U.S. investors to opportunities in Panama and Nicaragua immediately following the liberation of those countries from dictatorship.

However, our small size also makes it important that we work closely with other agencies that share our objectives of promoting U.S. overseas investment, and for that purpose our

association with the CORECT has been fruitful in terms of our relationship with the renewable energy industry.

Up to the present time, OPIC's support of the U.S. renewable and energy conservation industry has included insurance and financing of major geothermal energy projects in the Philippines and Indonesia. We have also insured U.S. contractors providing services for geothermal exploration in Central America and exporters providing equipment for geothermal activities in Israel. A number of renewable energy companies--including companies in the wind, solar photovoltaic and biomass cogeneration industries--have participated in OPIC investment missions and have made use of other investment development services.

Based on OPIC's experience with the renewable energy industry, I would characterize the industry as one in transition from a period of incubation in a domestic market to a global industry. Improvements in technical efficiency and reductions in cost have contributed to enhance the international competitiveness of many renewable and energy conservation technologies with the result that the industry's exports are growing and are projected to continue to expand. I believe that the activities of the CORECT have also contributed to stimulating overseas markets for U.S. technologies in this sector.

As the industry grows, matures and develops, we expect that many of its export relationships will evolve into investment opportunities. In anticipation of these developments, OPIC has chosen to play an active role in the CORECT. OPIC participates in both the full CORECT and on its Subcommittees on Market Development and its Finance Task Force. Under the auspices of the Finance Task Force, OPIC has participated actively through an interagency agreement with the Department of Energy, that has enabled us to co-finance several business plans and prefeasibility studies for renewable energy projects. The first of these activities involved a business plan for a project development company that would identify project opportunities, locate qualified U.S. developers, prepare feasibility studies and source competitive financing for renewable energy projects.

As a result of this effort, a project development company, International Energy Finance, Ltd., (IEF) was incorporated in 1988 and has undertaken project development activities in Costa Rica, Jamaica, the Dominican Republic and the Philippines. With financial support from DOE and the Resources Development Foundation, OPIC and IEF completed a pre-prefeasibility study that led to a memorandum of understanding between IEF and the Government of Jamaica to develop several biomass cogeneration projects. With support from A.I.D. and the U.S. developer, the project is now in the full feasibility study stage and is under active consideration for OPIC finance and insurance.

If OPIC's experience is any indication, the CORECT is an interagency group that is proactive and results oriented. For this reason, we do not believe that the changes proposed in S. 341 are necessary. The broadening of CORECT's mission may diffuse its energies and interfere with its original mandate to improve the coordination of agencies' programs and to support the activities of industry. The outreach goals specified in S. 341 are likely to be better attained through existing export promotion programs.

In addition to our participation in the CORECT, OPIC is embarking on several new initiatives that could be of direct benefit to the renewable and energy effiiency industries. The primary one is the Environmental Investment Fund, a privately owned and managed fund, guaranteed in part by OPIC, that will make equity investments in environmentally beneficial projects throughout the developing and emerging economies. The Fund, which will be managed by Kidder Peabody, Inc. in partnership with Booz Allen & Hamilton, will make renewable and energy efficiency projects one of its priority areas for investment.

I am pleased to take this opportunity to report to you on our progress. With OPIC support and approval, the managers are about to begin the process of educating potential investment groups about how this new entity will identify attractive investment opportunities and fund them. The purpose of this educational process is to convince investors that it makes

sound business sense to become the owners of this fund. I say "sound business sense" because this fund will operate on proven investment criteria, investing in well-conceived, well-managed projects.

OPIC will support the Environmental Investment Fund in several ways. First, we have committed our investment guaranty authority, which will assure that the fund will be soundly capitalized. Second, we are helping Kidder-Peabody and Booz-Allen craft the fund's operating procedures and investment criteria. Third, we will assist the fund to take full advantage of the various investment support facilities available not only from OPIC and other parts of the U.S. government, but also from the programs and services which our counterpart agencies in other countries make available. Finally, OPIC, along with the fund's ownership group, will monitor the fund manager's operations, including its performance in improving the environment and protecting renewable natural resources.

The Fund will target investment opportunities in several key business sectors. In addition to renewable energy and alternative fuels, which I previously mentioned, the Fund will also invest in sustainable agriculture and forestry, ecotourism, and pollution prevention and abatement. U.S. business in these sectors possess superior environmental technology and experience that can be applied in developing and

emerging economies. We expect the Fund's investments will demonstrate the financial viability of investing in environmentally-beneficially projects in developing countries. It is OPIC's intent that a successful Fund will stimulate financial initiatives by other private-sector oriented development institutions.

In addition, OPIC is sponsoring several regional funds--for sub-Saharan Africa, Central and Eastern Europe, and the Asian-Pacific regions. The Africa Growth Fund already capitalized--at $25 million--is making investments in Africa. The other funds are in the process of capitalization or development and should be operational before the end of the current fiscal year.

OPIC is also expanding its investment development programs to include advisory services for small and medium-sized companies that are new to international markets. These services, which will be provided on a cost-reimbursable basis, will include environmental services, including those designed to improve energy efficiency and mitigate pollution and other adverse environmental impacts.

In conclusion, Mr. Chairman, OPIC looks forward to an increasing role in support of the renewable and energy

efficiency industries and to continued participation in the interagency Committee on Renewable Energy Commerce and Trade.

I would be pleased to respond to any questions you may have.

Senator WIRTH. Mr. Berg, thank you very much, and we have great respect for OPIC and what you all do, a very helpful entity. Thank you very much.

Mr. BERG. Thank you.

Senator WIRTH. Mr. Franklin Tugwell is president of the Environmental Enterprises Assistance Fund in Arlington. Mr. Tugwell.

STATEMENT OF FRANKLIN TUGWELL, PRESIDENT, ENVIRONMENTAL ENTERPRISES ASSISTANCE FUND

Mr. TUGWELL. Thank you, Senator.

I would like to say a word about Environmental Enterprises because it is a new institution, recently created by Winrock International and the Agency for International Development. Environmental Enterprises is a nonprofit 501(c)(3) and therefore we are not allowed to seek to influence legislation, and I want to say that at the outset.

My comments should be, I think, by way of a model for what we think is an institution that can help develop renewable energy projects in developing countries. Later on in our discussion I will speak for myself, rather than for the company.

Environmental Enterprises was created by a number of us who were very interested in trying to find ways to see renewable energy projects operating in developing countries. We saw that in the decade of the 1980's especially renewable energy flourished in the United States. I came to Environmental Enterprises from northern California. I worked for Pacific Gas and Electric Enterprises. And we have very large amounts of renewable energy, much of it of the kind that is especially appropriate for developing countries.

Yet when we looked around the world we found virtually none of these technologies contributing to solving those problems out there. And we began to analyze the barriers, trying to understand the reasons why these technologies were operating here, commercially successful, but did not exist out there.

It is about those barriers that I think we might seek to speak today. We found three important barriers. First, lack of knowledge. That is real.

The second, legal and institutional obstacles that made private power impossible to develop in those countries, and that included most renewable energy except for large hydro.

The third, what we call business development and financing problems. That is, we found that it was very difficult for small American companies that understood renewable energy systems to actually go out and market, to operate in developing countries, and when they did it was often very difficult to finance these projects, because much of the money flowing to renewable energy or to energy anywhere was in very, very large chunks, going to governments and so on.

So we designed Environmental Enterprises as an institution that would solve the last of these problems. Our feeling was that the information problem has been well addressed and can be addressed by outfits like the Export Council on Renewable Energy, that AID is well set up to try and address the legal and institutional barriers, but that there was a need for a nonprofit that could go out

and try and identify projects on the ground and provide early high-risk financing and bring them to the institutions that could get them going.

We have been going, we have been operating for only a few months, but my first experience in trying to make this concept work have been extremely exciting. We feel we have identified a large number of small projects that fit this category. That is, they need this kind of help, but once they get this help they can become commercial and get moving quickly.

So that I think there are some lessons to be drawn from the activity that Environmental Enterprises has been conducting and it represents something of a model.

That is my summary.

[The prepared statement of Mr. Tugwell follows:]

Testimony of Franklin Tugwell, President of Environmental Enterprises Assistance Fund, before the Subcommittee on Energy Regulation and Conservation, Senate Committee on Energy and Natural Resources

March 21, 1991

Introduction and Summary

I am grateful for the opportunity to address this subcommittee on the export of renewable energy and efficiency technologies.

Before proceeding, I should introduce Environmental Enterprises and explain its involvement with renewable energy technologies in the developing countries.

Environmental Enterprises is a nonprofit created in the fall of 1990 with the help of A.I.D.'s Office of Energy and Winrock International. Winrock International, for those of you unfamiliar with its work, is one of the largest development foundations, with offices and activities in more than 20 developing countries.

Environmental Enterprises is devoted to promoting the spread of renewable energy technologies in developing countries by identifying project opportunities and mobilizing investments--loans and equity--in the resulting projects. Our aim is to serve as a catalyst, helping energy entrepreneurs overcome many non-market barriers that these technologies face.

With that brief introduction, let me summarize quickly the message I would like to leave with you:

o One of the most dramatic changes in the energy scene in the United States in the last decade has been the growth of the renewable energy industry, and U.S. companies are now the leaders or fully competitive in many areas of this business--most notably in biomass, wind, solar, and hydroelectric power.

o The developing countries have experienced almost no growth in renewable energy development, despite the fact that they are in the midst of an energy crisis and private renewable energy systems are in many instances the most economically attractive for them.

o This lack of renewable power development is due to the existence of a number of barriers that have made renewable energy projects--and hence exports of U.S. technologies--very difficult. The cumulative result of these has been a widespread market failure in this area.

o The barriers to renewable energy development fall into three major categories: a) lack of knowledge; b) legal and institutional obstacles; and c) business development and financial barriers. Environmental Enterprises represents an innovation addressing the last of these, the business development and financial constraints--principally by identifying projects and providing early, high-risk equity and loan financing.

o Our first few months of experience with Environmental Enterprises strongly suggests that we have discovered a promising new approach to renewable energy development and support for energy efficiency companies. We have, we think, identified more opportunities than we expected and the prospects for catalyzing projects in the near term appear very good. Most of these projects will involve, we believe, opportunities for the export of U.S. technologies.

o Examples of projects we have identified and which need loans or equity to move ahead include: a wood-waste cogeneration and briquetting project in Honduras; small hydro projects in Costa Rica and Indonesia; and a small solar lighting and pumping company in the Dominican Republic.

Background

The growth of the U.S. renewable energy industry in the last decade has been well documented by studies of the U.S. Export Council for Renewable Energy. In California alone, generation capacity provided by renewable energy systems, including geothermal plants, wind farms, biomass burners, and solar thermal troughs, today amounts to many thousands of megawatts, and much of it has been developed and brought on line by private developers in the space of less than a decade. In the Northeast U.S. renovated and restored small hydroelectric facilities provide hundreds of megawatts.

What is less understood is the failure, during the same time period, of these and other renewable technologies to emerge in the developed countries, precisely where they are often even more attractive because they use indigenous fuels and displace imported oil, are privately financed and thus do not require further public

indebtedness, and can come on line quickly to help remedy growing energy shortages.

The power crisis in the developing nations of the world worsens daily. Most of the developing countries have avoided adding capacity for more than a decade, forced into this by mounting debts and a critical scarcity of foreign exchange. At the same time, the demand for power has been growing rapidly, averaging nearly 7% per year over the last two decades. Faced with these conditions. Demand growth has begun to overwhelm even interim solutions--usually diesel units purchased to cover peak needs, albeit at a high price. In the Dominican Republic, for example, residents and businesses in Santo Domingo have power less than half the time. As a consequence even the most successful economies face chronic shortages that will last for years. And as load-shedding has become more and more common, governments are realizing that the costs of insufficient or unreliable power often exceed $1 per kilowatt hour.

Barriers to Private Power Development

Unfortunately, commercially sound, smaller-scale, renewable energy systems face powerful artificial barriers that prevent their adoption in developing countries. One barrier is simply lack of knowledge; fortunately A.I.D., CORECT, and the Export Council on Renewable Energy have begun to carry the message abroad in an effective manner. A more serious problem is the legal and institutional obstacles to private power development that exist in most developing countries. Most governments are hostile to private power development, and utilities continue to discourage small power systems they do not directly control. Where private power development has begun, A.I.D.'s Office of Energy has been instrumental in helping convince governments of the benefits to be had from this new approach. A key example of this success is Costa Rica.

Assuming an accommodating public sector and a friendly utility, private developers--those critical "energy entrepreneurs" who actually move projects along-- face additional difficulties that impede the spread of renewable power sources. These are in the areas of business development and finance.

Consider business development first. Companies with renewable technologies find it very difficult to discover and develop project opportunities. Because they are smaller in scale and often carefully tailored to specific fuels--rice hulls, cotton gin trash, nut shells, orchard prunings--the inventors and owners of commercially viable

biomass technologies are often small or medium-sized companies with limited resources and experience. They are often unfamiliar with foreign travel, and find the business and political environment of developing countries daunting. The same is true of companies specializing in small hydro, wind, or solar power.

In the case of renewable energy systems, the local owners of the resource base are typically unfamiliar with, and often wary of, the power business. A large rice mill with thousands of tons of waste may not even consider power generation as an alternative, and may worry that reliance on hull-combustion for power supplies will make the company vulnerable. This is never a problem with fossil-fuel project development.

In a nutshell, project development abroad is more difficult than it is in the U.S.; it requires an understanding of local conditions, local partners, and an ability to tailor technology to a specific industry and site. Again, many renewable systems are not produced in a cookie-cutter fashion, like the popular diesel systems they seek to displace. They must be designed for specific conditions. The informational and logistical problems of finding a promising location for, say, a small hydro plant running at 4-10 megawatts, may be insurmountable for a U.S. company, despite the attractiveness of the technical system and the value of this power to the developing country where it might be built.

Keeping a marketing specialist active in the international market typically costs a company more than $200 thousand per year, and one project may be as long as four years in gestation. This high cost has made many of the more successful international companies target only power systems over 100 megawatts in size.

The financing barrier is also formidable. The major international financial institutions (World Bank and regional development banks) generally make very large loans exclusively to governments. Government agencies then hand these funds to state-owned utilities committed to large-scale fossil-fuel installations. Local financing, when available, is often extremely expensive has limited access to dollars. Although there are many private funds--among them venture capital funds and socially responsible investment funds--willing to invest in renewable energy, these rarely "touch ground" in the developing countries, relying on banks and other institutions to bring investment opportunities to them. They cannot actively seek project opportunities because they rarely come in contact with the owners of resources themselves, and the sizes of the investments are too small to cover the management costs of travel and project screening.

The result has been a clear example of market failure. Attractive private renewable energy projects have been systematically bypassed by banks and utilities in the developing nations, where these projects would make an especially valuable contribution. And they rarely come to the attention of technology owners or interested investors. To a considerable extent, the same applies to other environmentally responsible technologies, ranging from those that increase energy efficiency to a wide array of waste-management systems.

Role of Environmental Enterprises

With the help of U.S. AID's Office of Energy and Winrock International, the founders of Environmental Enterprises have created a mechanism designed to overcome these business development and financing barriers. It will work closely with AID, Winrock, and other development institutions with a field presence to identify promising smaller scale project opportunities. Subsidiaries of Environmental Enterprises staffed by local people in key developing countries will also help identify and nurture projects. Enterprises will use its investment capital (loans and equity) in a carefully targeted manner to catalyze projects, and help to package renewable energy investments for the larger public and private investment funds. Because it is a nonprofit, Environmental Enterprises will recycle all earnings to new environmentally responsible projects in the form of grants and investments. Opportunities identified by Winrock and other international development organizations can be referred to Environmental Enterprises to carry them forward.

I am pleased to report that our first few months of experience with Environmental Enterprises strongly suggests that we have discovered a promising new approach to renewable energy development. We have already identified a range of projects that can benefit from the kind of stimulus we were created to provide, and most represent a potential for the export of U.S. renewable energy technologies.

Specific Comments on Proposed Legislation

Because Environmental Enterprises is a nonprofit 501(c)(3)(pending), it does not seek to influence legislation. In my personal capacity, however, I am happy to share our strategy and experience with others. It is my hope that the model presented by Enterprises may be instructive to the Subcommittee concerning the problems associated with developing country renewable energy development and export promotion. I believe that U.S. industry is already well prepared to expand into the

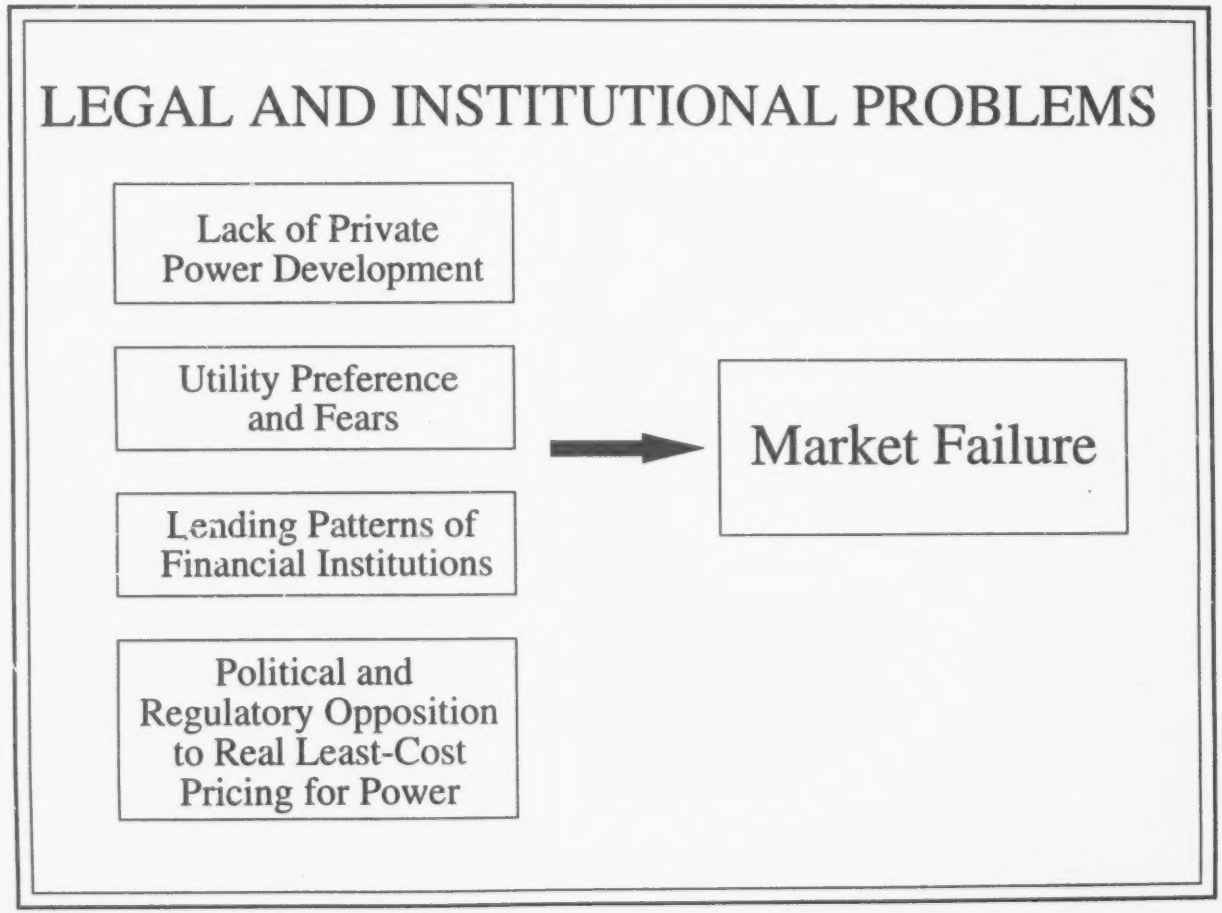
international market--no direct assistance to companies to help them gear up is needed--and that existing programs for cost-sharing of prefeasibility and feasibility support are effective and probably sufficient to meet the demand. Exports will grow rapidly as soon as the institutional doors open and energy entrepreneurship receives a boost and mechanisms come into being that help finance small-scale investments. The efforts of the A.I.D.'s Office of Energy have been critically important in convincing countries to lower the institutional barriers to private power development, and should be both lauded and encouraged. And the Export Council for Renewable Energy has been aggressively working to overcome the "knowledge" gap.

Note on Environmental Issues

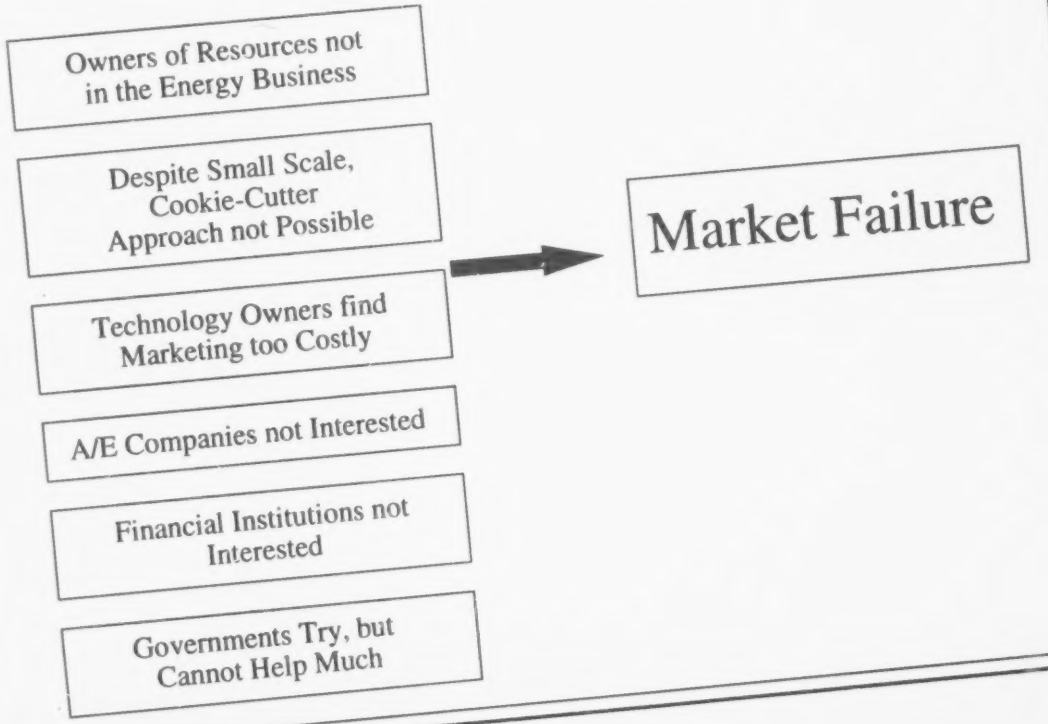
Development can and should create a healthy and secure life for humans without harming the physical environment which is necessary to support them. Essential to this is the management of natural resource systems, including those that produce energy, in ways that sustain or enhance their long-term productive capacity. Renewable energy development is particularly critical, as is an overall improvement in energy efficiency on both the demand and supply sides. A recent study by the EPA concluded that renewable energy systems--hydro, biomass, wind, and solar technologies--could account for more than 60% of the reasonably attainable reductions in carbon dioxide emissions in the next 20 years. By catalyzing the development of these commercially viable, but currently neglected, technical alternatives, I believe that an entity like Environmental Enterprises will directly address the threat of climate change induced by greenhouse gas emissions.

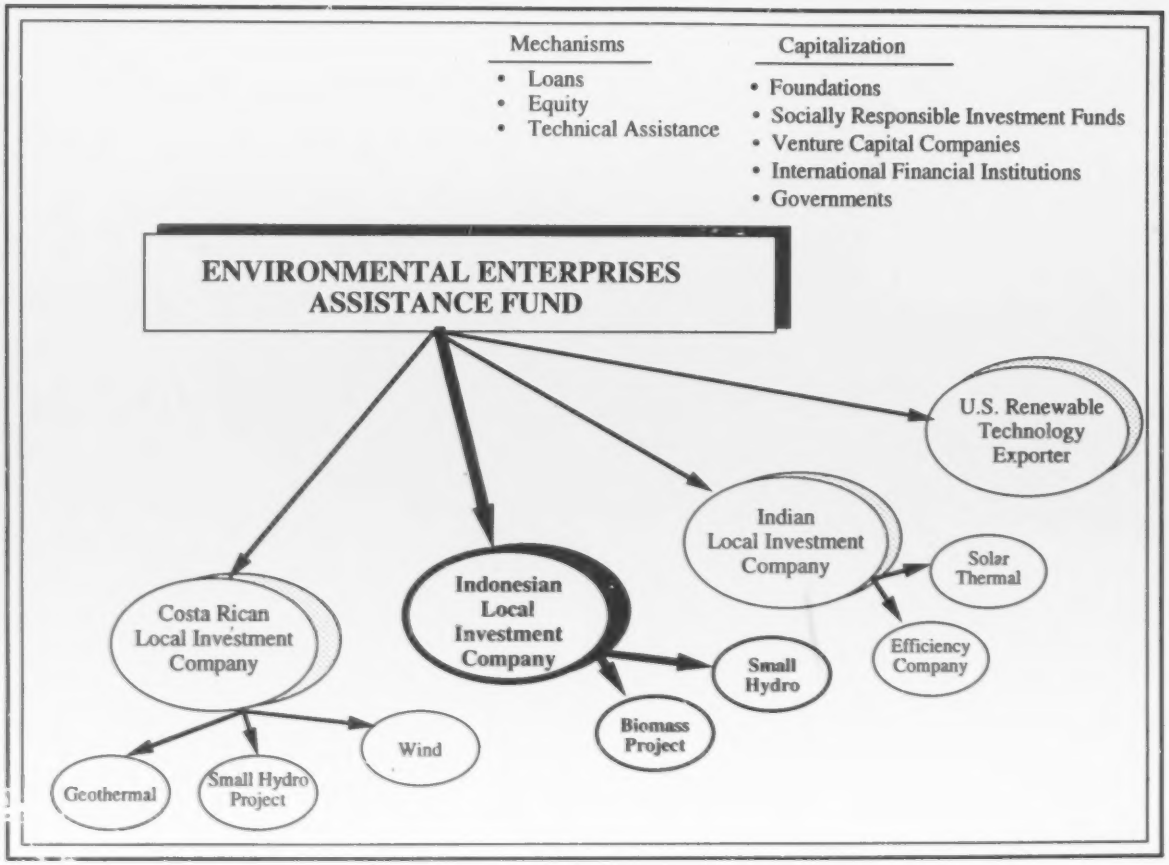
THE BARRIERS TO CHANGE

- Lack of Knowledge
- Legal and Institutional Constraints
- Business Development Constraints


LEGAL AND INSTITUTIONAL PROBLEMS
Lack of Private Power Development
Utility Preference and Fears
Lending Patterns of Financial Institutions
Political and Regulatory Opposition to Real Least-Cost Pricing for Power
Market Failure

BUSINESS DEVELOPMENT BARRIERS TO RENEWABLE POWER DEVELOPMENT


Owners of Resources not in the Energy Business
Despite Small Scale, Cookie-Cutter Approach not Possible
Technology Owners find Marketing too Costly
A/E Companies not Interested
Financial Institutions not Interested
Governments Try, but Cannot Help Much
Market Failure


Mechanisms
• Loans
• Equity
• Technical Assistance
Capitalization
• Foundations
• Socially Responsible Investment Funds
• Venture Capital Companies
• International Financial Institutions
• Governments
ENVIRONMENTAL ENTERPRISES ASSISTANCE FUND
U.S. Renewable Technology Exporter
Indian Local Investment Company
Solar Thermal
Efficiency Company
Costa Rican Local Investment Company
Indonesian Local Investment Company
Small Hydro
Biomass Project
Wind
Geothermal
Small Hydro Project

ENVIRONMENTAL ENTERPRISES ASSISTANCE FUND
TECHNICAL AND BUSINESS ASSISTANCE
INDONESIAN LOCAL INVESTMENT COMPANY
• Loans
• Equity
• Financial Packaging
SMALL HYDRO
BIOMASS
EFFICIENCY
REMOTE POWER
WIND

Senator WIRTH. A real summary indeed. Thank you very much, Mr. Tugwell.

Ms. Deborah Bleviss.

Ms. Bleviss is executive director of the International Institute for Energy Conservation. Ms. Bleviss, thank you.

STATEMENT OF DEBORAH LYNN BLEVISS, EXECUTIVE DIRECTOR, INTERNATIONAL INSTITUTE FOR ENERGY CONSERVATION

Ms. BLEVISS. My purpose here is to actually talk about the new aspect of CORECT, which is to look at promoting the energy efficiency industry, and I would just like to very quickly summarize my remarks.

First of all, let me put this in context. The International Institute is a nonprofit whose purpose is to foster energy efficiency implementation in developing countries for economic and environmental reasons. We do a wide variety of activities, including information dissemination, and we have two regional offices.

But one key component of what we do is to look at private sector activity, because clearly that is the fuel that is going to drive the demand for energy efficiency. And we have been quite successful on the policy side, not so successful in trying to get the private sector active in this area.

One of the issues that I think we have to address when we talk about CORECT and extending it to the energy efficiency industry is that the energy efficiency industry is not a carbon copy of the renewables industry. In fact, many members of the energy efficiency industry would not identify themselves as being part of the energy efficiency industry. They are producers of refrigerators that happen to be energy efficient or air conditioners that happen to be energy efficient. And some of them would not want to identify themselves as part of the energy efficiency industry, lest it be seen that the rest of their products are somehow bad, and that is definitely a prevailing viewpoint that we see in the industry.

Hence, when CORECT looks at expanding into the energy efficiency industry, an approach that just says we will do everything we have done with renewables to the energy efficiency industry we think is inherently the wrong way to go, that a fresh start has to be made in looking at what is needed in energy efficiency.

I am just going to tick down some items that we think are critical in terms of supporting the American energy efficiency industry. The first point is obvious: They do not have a trade association, and obviously a key way that CORECT interacts with the renewables industry is through its trade association.

Now, clearly the Government cannot play a directly active role in fostering it, but it can play an indirect role, for example, trying to get all the various trade associations that have components of the energy efficiency industry together to try to at least organize an informal association of the organizations.

Secondly, making available a list of the energy efficiency companies and what products they sell and how to get them. This has been done for the renewables industry, I might note, and, more importantly, our competitors overseas have done it.

For example, in Tunisia we know that the Europeans have provided them with a list—Tunisia has a very active energy efficiency program. The Europeans have provided them with a list of all the energy efficiency vendors. And we in this country could do very much the same thing and should.

Thirdly, there is the issue of access to good information. There are a lot of snake oil salesmen out there. Developing countries do not have access to information in general, and certainly information on energy efficiency technologies has been quite lacking. And indeed, many of the databases that we have developed in this country to answer the needs for people to access information on such technologies here cannot be accessed from developing countries.

A fourth activity is simply to brief our American companies on the natures of the markets in specific countries. It is very expensive for American companies to try to assess each market, and there are quite a few different developing countries out there. This is something that IIEC has done along with the Alliance to Save Energy and we have gotten very positive feedback, but we are two small organizations with our own limited resources.

Trade missions is another important aspect, and I am pleased to say we are organizing with the Alliance a trade mission to Thailand, which is where we have one of our offices, next month. And we would like to see more of this happening with CORECT involved. Unfortunately, this trade mission was done outside of CORECT. The U.S. Trade and Development Program was the one that sponsored us in this endeavor.

Another one which I think bears particular review from CORECT's point of view is that, even under the best of circumstances, there will be many energy efficiency companies that will never be directly involved in export of products. They do not have the resources, they do not have the know-how, or whatever.

If they could access a trading company that could—in essence that has the know-how and the resources to market their products abroad, that would be a good thing. Now, the problem has been that with the energy efficiency vendors their experience with trading companies thus far has not been good. The trading companies do not know enough about the products to do a decent job of selling them.

One of the things we believe needs to be done is an assessment of whether it makes sense to create an energy efficiency trading company, either public or private, and if it does make sense again have CORECT play an important role in encouraging its development.

Finally, we would just argue that an important element also is to make certain that when there is U.S. Government financing, as in the case of OPIC, that there is an assurance given that energy efficiency products are included in that process.

And we give a citation in our testimony about OPIC having financed a light bulb factory refurbishment, which was an incandescent light bulb factory refurbishment. And our feeling is that had that investment instead gone to compact fluorescents the downstream impact in terms of the difference in power demands and the adverse impacts on both the capital and environment in the country would have been night and day. We think that we will be reaping the negative effects of that for many years to come.

Thank you.
[The prepared statement of Ms. Bleviss follows:]

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TESTIMONY ON CORECT,
the Committee on Renewable Energy Commerce and Trade
Subtitle A, Title IV
of S. 341

Before the
Senate Subcommittee on
Energy Regulation and Conservation
of the Committee on
Energy and Natural Resources

Submitted by
Deborah Lynn Bleviss
Executive Director
International Institute for Energy Conservation

March 21, 1991

Mr. Chairman and Members of the Subcommittee, thank you for inviting me to testify. I am Deborah Lynn Bleviss, Executive Director of the International Institute for Energy Conservation (IIEC). The IIEC is a not-for-profit organization formed in 1984 to expedite the implementation of energy efficiency in developing countries for economic, environmental, and energy security reasons; as such, we are very unique in the non-profit world. Our organization meets its charge through a variety of mechanisms. We have a regional office for Asia in Bangkok, Thailand and will soon be opening a regional office for Latin America in Santiago, Chile. Through these offices, we work with local counterparts to get real-world activity in place. For example, a major focus of our attention in Thailand has been the implementation of least-cost utility planning because the country is besieged by double-digit electricity demand growth; last October, with our input, the Thai government became the first one in the developing world to require its utilities to develop a "demand-side management" plan. In addition, from our Washington office, we focus on three other major activities: information dissemination and training, policy assessment, and stimulation of private sector activities.

It is perhaps worthwhile reviewing the types of activities in which we are engaged to promote private sector activity in energy efficiency, since this is the subject of these hearings. With the Alliance to Save Energy, we have sponsored briefings for American energy efficiency companies on the potential for their products in developing countries in general and Thailand in particular. Also with the Alliance, and with support from the U.S. Trade and Development Program, we will be leading a trade mission to Thailand of American energy efficiency companies next month; they will be provided with support material--authored by our organizations--about how to do business in Thailand as well as a resource guide on U.S. government programs that can assist them in their activities. In addition, we are working to spur the development of a joint venture energy service company in Thailand and we have been asked to assess the potential for a similar company in India. Finally, from 1986 through 1988, we undertook a demonstration assessment of the potential for improving the efficiency of a steel factory in Maanshan, China, which involved six American companies. Based upon this experience, our organization has gained substantial insight into the need for private sector activity in energy efficiency in developing countries, the mechanisms required to meet that need, and the problems facing the U.S. industry (as well as industries from other countries) in meeting the need.

We therefore welcome the opportunity to testify at these hearings and salute the cosponsors of S. 341 for their efforts to address U.S. export needs in energy efficiency. There is no doubt that there is a substantial need for energy efficiency products in developing countries. These countries are increasingly coming to the conclusion that a business-as-usual energy development path is not sustainable. The cost in terms of capital requirements, oil import vulnerability, and environmental degradation is simply too high. Hence, a development path that emphasizes meeting growing energy service needs by improving the efficiency with which those energy services are provided will necessarily grow

in importance in the future. And since the U.S. energy efficiency industry has played a leading and innovative role in the development of many energy efficiency products, the benefit for the industry could be substantial. Indeed, a recent analysis done by the IIEC for U.S.AID concluded that the technical energy efficiency potential in India alone amounted to an investment of $20 billion; even a fraction of this investment would prove a major boon to the American industry.

However, it is important to note that other OECD countries have also recognized the emerging market for energy efficiency and are already working actively to assist their own companies in marking abroad. These countries include Japan, Germany, Sweden, and Canada. Therein lies the importance of such U.S. government activities as the Committee on Renewable Energy Commerce and Trade (CORECT). For the U.S. energy efficiency industry, more so even than the renewable industry, is one that is diffuse, disaggregated, unorganized and relatively unsophisticated with regard to the export potential of its products. An industry such as this is precisely one that needs considerable government guidance and assistance.

As you know, CORECT began solely as a program to promote the export of renewable energy technologies; it was not until very recently that it was amended to include energy efficiency technologies. However, despite the addition of energy efficiency to the program, CORECT's focus has continued to be overwhelmingly on renewable energy technologies. This is the result of both the program administrators as well as the industry itself. On the government side, the Department of Energy has been slow in recognizing that the energy efficiency industry is fundamentally different in nature than the renewables industry and hence it has been slow in adapting the CORECT program to the energy efficiency industry. On the industry side, since the energy efficiency industry lacks a central trade association, much less a trade association that is interested in export--attributes enjoyed by the renewables industry--there has been no pressure point or spokesperson to voice the changes that are needed at CORECT to accommodate the energy efficiency industry. The lack of a central trade association by the energy efficiency industry provides another liability for the CORECT process as well. Since a major means by which CORECT presently carries out its charge is through trade associations, the program lacks a clear means of being able to communicate with and support the efficiency industry.

It is our belief that in order for CORECT to be truly effective in expanding its charge to include the energy efficiency industry, it must take a fresh look at the attributes and limits of the domestic industry, rather than simply assuming that whatever it was doing for the renewables industry, it can merely expand to include the energy efficiency industry. What follows are some of the activities we believe the program could engage in to successfully assist this industry to meet its export potential.

1. Encourage the creation of a central trade association which has as part

of its charter the promotion of exports abroad. As already mentioned, there is no such organization presently. Instead, the energy efficiency industry tends to disaggregate its trade association involvement along the end-use categories of its products or services. For example, energy efficiency appliance manufacturers tend to work through the Association of Home Appliance Manufacturers (AHAM); heating, cooling and air conditioning manufacturers through the American Society for Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE); energy service companies through the National Association of Energy Service Companies (NAESCO); and so on. Unfortunately, without such a central organization there is no easy way to interact with the industry, from the perspective of either the government or individuals. And since CORECT specifically carries out its charge through trade associations, this absence of a central organization for the energy efficiency industry is a major problem. Hence, an important initial focus for CORECT should be to help spur the development of a central organization. For example, it could encourage meetings of all the trade associations that represent different elements of the energy efficiency industry, meetings that could eventually lead to at least the establishment of an informal central association of organizations.

2. Develop a list of energy efficiency companies for use abroad. A major problem facing all potential buyers of energy efficient products and services is knowing who to contact. This is particularly a problem for developing and Eastern European countries, where access to information is always problematic. An important solution to this problem is the development of a comprehensive list of all energy efficient companies--disaggregated by technology or service type--that includes information on how they can be contacted and who the contact person is. We know that such information is provided by other industrialized countries. For example, in Tunisia--which has a particularly aggressive energy conservation program--a list of European energy efficiency manufacturers is routinely available. Moreover, CORECT has already developed such a list for the renewables industry in the U.S. To my knowledge, however, there has yet to be a commitment by CORECT to develop a similar list for the energy efficiency industry. Such a commitment is needed and needed soon.

3. Ensure access abroad to credible information on energy efficiency technologies. As already noted, credible information is always difficult to access in developing and Eastern European countries. This is particularly true of information on energy efficiency technologies. In response to the oil crises of the 1970s, many industrialized countries--including the U.S.--established databases that include information on energy efficient technologies, but their applicability to developing and Eastern European

countries has been limited. In the case of the U.S., in particular, many of the databases are constrained only to be used by Americans. And of those that can be accessed outside of the country, there is often a problem with the content of the information in the databases. It is tailored to the American context; there is little peer review of the quality of the information provided; and much of the information is purely in a bibliographic form, which is of little use to a developing country user with a limited library. There are a few databases that are specifically oriented to developing country users, but they tend to be biased in favor of appropriate "low-technology" options aimed at the rural sector, rather than the higher technology applications for the modern sectors of these countries.

Needless to say, if there is to be any demand from developing and Eastern European countries for energy efficient products, they must first have good, impartial information on the products. Essentially they require a "one-stop shop" that includes a detailed description of the technology itself and real-world examples of how it is applied, what the projected energy savings are, the range of costs for the technology, how to get access to the product, and a list of further readings about the specific technology. Such a database does not now exist. CORECT could and should play an important role in trying to get such information accessible, especially considering that the division of the Department of Energy responsible for CORECT is also responsible for administration of its databases. Specifically, CORECT should seek to amend existing databases to meet the information needs of developing and Eastern European country users and to have these databases market widely to these countries.

I might just add that in recognition of the need for developing countries to access information on energy efficiency technologies--and the absence of activity to address this need--the IIEC is developing a catalogue of all known databases worldwide that contain information on energy efficiency technologies and their relative strengths and weaknesses. The catalogue will feature information on the specific data in each data base, how it is reviewed, and how this data can be accessed from developing countries.

4. Sponsor briefings to American companies on the nature of the markets in specific countries abroad. Even under the best of circumstances, American energy efficiency companies cannot possibly monitor the markets of all developing and Eastern European countries. They simply do not have the resources to undertake such a task. But such information is critical in order for them to decide where to target their efforts. The U.S. government, on the other hand, does potentially have access to this information. For example, through the Department of Commerce's Foreign

and Commercial Service, there is routine monitoring of the emerging markets in a multitude of countries worldwide. CORECT could and should play a key role in coordinating the U.S. government's ongoing overseas business assessment activities to specifically address the energy efficiency market.

5. Organize trade missions to particularly promising countries. Trade missions are another important mechanism to promote American export activities. And CORECT has used this mechanism with the renewables industry. What is needed now is a rapid scale-up of a strategy for using this mechanism for the energy efficiency industry. Indeed, it is a rather sad statement that the trade mission I referred to earlier that will be going to Thailand next month has occurred outside of CORECT. While I commend the Trade and Development Program's leadership in this arena, CORECT should be assuming the coordinative leadership on trade missions in the future in order to optimize the U.S. government's overall impact in promoting energy efficiency exports.

6. Assess and, if promising, encourage the establishment of energy efficiency export trading companies. It is important to recognize that many of the producers of energy efficiency products and services are young companies that have limited financial resources and very little, if any, experience in exporting. Moreover, they are often stretched to the limit just to keep up with domestic demand for their products. Other energy efficiency producers are found in divisions within highly diversified companies that are also given few financial resources by their parent company to market their products widely. Still other energy efficiency producers just have no interest in allocating their resources to developing markets abroad. Each of these types of companies could greatly benefit by using export trading companies, which have the expertise, desire, and resources to market abroad. But while such trading companies have benefitted many small businesses in the U.S., the experience to date with such companies by energy efficiency vendors has not been good. Many energy efficiency products are characterized by high "value added" at the buyers end of the spectrum. Training for the product purchasers on how to use--or even program--energy efficiency products is frequently required, particularly if system design changes are required. This is a capability most trading companies lack, and they are not generally interested in acquiring such a capability. Hence, some--including the IIEC--have suggested that a trading company be created which has specific expertise in energy efficiency technologies so that the training needs of the potential buyers can be met. CORECT could and should play a major role in assessing the merit of this idea, and if it is seen as promising, spurring the establishment of such an energy efficiency trading company.

7. Ensure that projects for which U.S. government financing is provided utilize cost-effective energy efficiency technologies. Through both the Overseas Private Investment Corporation (OPIC) and the Export-Import (Ex-Im) Bank, the U.S. government routinely finances projects that could help spur the demand for energy efficient products, and hence the demand for American exports of these products. Moreover, in doing so, the country in which the project is being undertaken will benefit. For example, data obtained from Phillips Lighting Corporation shows a modern automated factory producing energy efficient compact fluorescent lamps (CFLs) produces 6 million CFLs per year and requires a capital investment of $7.5 million. The factory's output, in turn, will save 2.67 billion kilowatt-hours (kwh) per year of electricity needs, equivalent to the output of a nearly 700 megawatt baseload coal-fired plant. A power plant of that size requires a capital investment of some $1 billion--139 times more capital than the CFL plant.

This example illustrates the benefit that can accrue if U.S. government financing is provided for projects that use cost-effective energy efficient technologies. But neither Ex-Im Bank nor OPIC presently include this element in the criteria they apply to potential projects. The downstream result can be unfortunate both for the U.S. energy efficiency industry as well as for the particular country involved. For example, in early 1990, OPIC, in collaboration with the World Bank, underwrote a $150 million arrangement for General Electric to refurbish 13 Tungsram incandescent bulb factories in Hungary. On one level, this appeared to be a very reasonable investment to modernize highly inefficient factories; furthermore, as far as OPIC was concerned, it had met its charge to ensure that no projects it finances have adverse environmental impacts. However, the same $150 million could have financed over 20 new compact fluorescent lamp factories, reaping downstream investment savings of more than $20 billion by avoiding the construction of 14,000 megawatts of power plants that will eventually be required to power those inefficient light bulbs. Needless to say, the investment in compact fluorescent factories would also have prevented the release of air pollutants and greenhouse gases that will inevitably result from the construction of the additional power plants.

CORECT could and should play an important role in coordinating government agencies to broaden the review of potential U.S. government financing of projects to include an assessment of whether energy efficient technologies are used. As a result, the U.S. energy efficiency industry will benefit, as well as individual countries. And the number of "lost opportunities", as characterized by the Hungarian example, will be reduced.

Other Issues

With regard to the specifics of the bill itself, we do not have many comments. While we commend the cosponsors on their inclusion of energy efficiency in the CORECT program, suffice to say, the bill still primarily addresses the renewables industry. We hope some of the points I have just made with regard to the needs of the energy efficiency industry are eventually incorporated into the final bill.

However, there is one element of the bill that we find puzzling. In section (3) on training and assistance, there is a stipulation that CORECT "provide financial assistance to support non-profit institutions designed solely and specifically to support the efforts of domestic renewable energy and energy conservation companies to market their products, and to develop environmentally responsible projects in developing countries". As I noted earlier, the energy efficiency industry lacks a trade association, much less an organization devoted to the exports. Hence, the association defined in the language of the bill, simply does not exist for the energy efficiency industry. Furthermore, the specific language of the bill would preclude other non-profits--for example ourselves and the Alliance to Save Energy, both of which have been the most active in seeking to spur U.S. energy efficiency exports--from qualifying for financial assistance from CORECT simply because we are not designed solely to promote energy efficiency exports. While the cosponsors may have placed such language in the bill to spur the energy efficiency industry to organize itself, the language may instead have the unwanted effect of precluding the funding of organizations that could in fact help the energy efficiency industry to organize itself!

Conclusion

In conclusion, then, I would like to commend the Subcommittee for holding hearings on the CORECT program and to commend the cosponsors of S. 341 for their work in seeking to assist the energy efficiency industry to export its products abroad. My organization believes such an activity would greatly benefit both developing and Eastern European countries. However, in broadening the CORECT program to include the energy efficiency industry, we urge the Subcommittee to recognize the differences between the energy efficiency industry and the renewables industry. In many cases, what has worked for the renewables industry will not work for the energy efficiency industry.

We therefore recommend that CORECT take a fresh look at the characteristics, strengths, and weaknesses of the energy efficiency industry, and construct its program for the industry accordingly. In particular, we believe that the following types of activities would be a propitious beginning for CORECT's program for the energy efficiency industry:

- Spur the development of a trade association for the energy efficiency industry;
- Develop a list of energy efficiency companies for use abroad;

- Ensure that developing and Eastern European countries have access to good and reliable information on energy efficiency technologies;
- Provide to the U.S. energy efficiency industry market assessments on the energy efficiency markets in these countries;
- Organize trade missions of energy efficiency companies to selected countries where interest in energy efficiency is highest;
- Assess, and if positive, encourage the development of energy efficiency trading companies; and
- Ensure that U.S. government-financed projects place a high priority on the use of cost-effective energy efficient products.

Senator WIRTH. Thank you very much, Ms. Bleviss.

Our final witness is no stranger to the committee: Mr. Scott Sklar, the executive director of the U.S. Export Council for Renewable Energy and otherwise wearer of many solar hats.

STATEMENT OF SCOTT SKLAR, EXECUTIVE DIRECTOR, U.S. EXPORT COUNCIL FOR RENEWABLE ENERGY

Mr. SKLAR. That is right, and if we had solar microphones here we would not need these wires to talk to you, Senator.

The Export Council was set up in the early 1980's because over 55 percent of our sales in renewable energy were going overseas, and we found that at that time we were sort of losing a lot of opportunities because the U.S. Government was not coordinated.

So this consortia composed of the solar, the wind, the geothermal, the hydro, the biomass trade associations, and as well with the National Association of Energy Service Companies, to start getting energy efficiency in our midst we developed this consortia. We went to Congress and, through our request, the Committee on Renewable Energy Commerce and Trade was created, this Federal interagency board, was created.

It was reauthorized under Public Law 101-218, which this committee approved, and we broadened it to energy efficiency, at our request, as long as it was tied to renewable energy sales, because many of our technologies relate to energy efficiency kind of equipment: energy efficiency appliances, lighting, for example.

We also included in Public Law 101-218 an authorization for OPIC to set up a pre-investment fund for renewables at around $300,000. OMB has not allowed OPIC to set that up. Senator Hatfield requested that OMB allow OPIC to do it and they responded, well, maybe they should use their environmental fund, but they did not want any escrow approach.

Why we have come to this committee to ask for financing under DOE is that theoretically, if OPIC were allowed to do their job, we would not need DOE to help us in pre-feasibility money. And I will get into the reason we need it in a second.

The things that CORECT did to really help us enhance the market opportunity overseas was doing educational materials with industry. This is one we did jointly with AID to show U.S. products in AID countries, because the mission directors have control of the money in these AID countries and they were looking, their facts were based on 1970 information.

They also involved marketing directories in promotion. We have developed a series of trade directories, and in fact we are in the midst of setting one up with the Air Conditioning and Refrigeration Institute, the National Association of Energy Service Companies, and the Solar Energy Industries Association on energy efficiency products and services. These directories are distributed through Department and catalogue trade shows.

Third, we have had an immense amount of market identification effort. We have sent this industry all over the world. We know what projects are out there, but we, as Frank Tugwell has said, we have had problems in getting them financed.

So what we have started doing with CORECT is to how to get these projects financed. Two tacks that are under way is: one, to set up a one-stop shopping, essentially, format, where the U.S. industry can go to OPIC, AID, Ex-Im, TDP, and use one form to basically get faster assistance or choreograph the kinds of assistance that the Federal Government can give to cut a deal.

The second thing we are trying to do is to aggregate dollars from three agencies—AID, DOE, and EPA—to help us set up a fund called the International Fund for Renewable Energy and Efficiency, to help provide pre-feasibility money, pre-investment money, to jump start projects and to support the good kinds of activities that, for instance, Winrock and to a certain extent IIEC are doing.

The next thing, though, is we need new directions. We have matured now. The market is changing. And the new directions are pretty simple. We need to link the projects identified that the Feds have been paying for for the last 5 years to the financing agencies and there needs to be a hand-holding relationship.

This is basically a small business set of industries, and even on the energy efficiency side, the energy efficiency kinds of components of some of these larger corporations are treated like small businesses.

The second thing is we do need overseas outreach. There is no agency that can do that for us. The Japanese, the Europeans have used their government specifically for renewables to enter certain regions to promote market share. We think that is what CORECT ought to do and we are absolutely unanimous in the fact that the industry ought to be assisted this way.

We have some cautions. The cautions in S. 341 are: Fossil fuels ought not to be part of this, CORECT. It is a $1.5 million program. It may be expanded, but fossil fuels and CORECT make no sense even if they are a cleaner use of fossil fuels. We do support hybrid use of fossil fuels, like wind, diesel, PV diesel, for example.

The second thing is we think there ought to be a narrow focus. While again renewable energy believes strongly, our industry, in energy efficiency, it ought to be tied to clean uses and not just a way to clean up dirty coal.

The third thing is we need a flexible response mechanism. It is a jungle out there, Senator, in the marketplace. CORECT cannot be stuck in a situation where we cannot meet certain market needs, whether they be in Eastern Europe, new moves in rural electrification in Indonesia and Mexico, or ways to stop immense suffering in Africa using renewable energy. And flexibility is the key word.

Thanks for the opportunity to testify.

[The prepared statement of Mr. Sklar follows:]

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Solar Energy Industries Association
Volunteers in Technical Assistance
Wood Heating Alliance

TESTIMONY

by

SCOTT SKLAR
EXECUTIVE DIRECTOR
U.S. EXPORT COUNCIL FOR RENEWABLE ENERGY

before

SENATE COMMITTEE ON ENERGY & NATURAL RESOURCES
INTERNATIONAL PROVISIONS OF S.341

MARCH 21, 1991
WASHINGTON, D.C.

INTRODUCTION

The U.S. Export Council for Renewable Energy (US/ECRE), the consortium of the nine U.S. renewable energy and energy efficiency trade associations, conceived of the idea to develop an interagency board composed of the federal agencies and entities involved in export promotion, financing and overseas development programs.

Congress passed P.L. 93-270 which established the Committee on Renewable Energy Commerce and Trade (CORECT) due to increasing concern that while the United States led the world technologically in renewable energy, the U.S. industry was losing world marketshare due to better coordination and support of competing industries by their governments.

CORECT was reauthorized in P.L. 101-218, due to its effective coordination between federal export and development agencies. In fact, the little funding beginning at $0.5 million in FY'86 to $1.5 million in FY'91, has leveraged millions of dollars of export sales.

One of the reasons CORECT has been so successful is that it has been industry-driven from the start. The focus has been to build sales and to do that successfully, strong cooperation with industry was achieved and programs were created in three distinct areas. The first set of programs were oriented to enhance overseas users and potential buyer education on the technical and economic superiorty of U.S. technology, and services.

The second program initiative was to provide "neutral" design assistance for overseas government and other potential buyers in the private voluntary organizations and private sectors. Special market development activities supported industry travel to over 15 countries to identify actual, financeable projects.

The third program direction was to support industry in trade promotion activities which includes participation in overseas trade and catalogue shows, reverse trade and training missions, and sponsoring U.S. trade shows for particular regions or market sectors.

These activities have succeeded by increasing U.S. sales overseas because of a consistant presence of the U.S. industry hand-in-hand with our government combined with a flexible strategy to meet the ever-changing marketplace.

PROGRAM HISTORY

CORECT has been an interactive process where information was dispersed initially to and from industry. Through a series of federal agency and industry activities. The initial stage was to survey: existing U.S. federal export activities, successful renewable energy business export strategies of both U.S. and foreign companies, and established government programs worldwide which seem to have helped increase renewable energy exports.

A set of fact finding exercises began in year two, where the Departments of Energy and Commerce surveyed energy prices worldwide by enduse sector. Industry teams visited countries in South Asia, the Pacific Rim, the Meditteranean Basin, and the Caribbean Basin & Latin America. By 1988, the results were concluded that the Pacific Rim and then, the Caribbean Basin & Latin America appeared to have the best market growth opportunities for U.S. industry.

In year three, industry teams went on actual project identification trips to Barbados, The Dominican Republic, Jamaica and Guatamala. The Caribbean Basin was selected first because it was in the American sphere of economic influence and marketing was easier due to its close proximity taking into consideration that U.S. industry was primarily small business. At the same time, an economic documentation effort of baseload renewable energy applications was compiled and presented to private bankers and representatives of the international development banks in Manilla. During the same year,
US/AID under CORECT auspices published a comparative economic analysis for renewable energy in remote applications, focussing on the agriculture and health sectors.

In the following year, US/ECRE under CORECT auspices held a Renewable Energy In the Americas conference and trade show in Miami. Over 200 overseas government, private sector, and non-governmental organizations attended case study seminars and a 60 booth trade show. During this year, the Department of Energy funded the compilation of a renewable energy database which was abstracted into the "Renewabl Energy for The World" brochure. Two projects on financing were initiated, one for village applications (FINESSE) in cooperation with The World Bank, and industry achieved a Congressionally -mandated set-aside for renewable energy in the Export-Import Bank of the United States.

In year five, industry teams visited The Phillipines and Indonesia to identify the next set of projects. A trade show similar to the one in Miami is being held in Los Angeles in September 1991. In October in Kuala Lumpur, an international meeting involving leading members of industry in renewable energy village demand-side and supply side energy projects will be highlighted before international funding agencies. Also, U.S. industry has decided to follow our international competitor nations, and create generic overseas marketing offices for U.S. industry which was a directive of the FY'91 appropriations language.

UPCOMING ISSUES AND PROJECTS

Aside from the establishment of generaic overseas offices in Eastern Europe, Southeast Asia, and Latin America, the industry is seeking to cement institutional access to funding and project assistance.

CORECT has been very successful in providing information, assisting industry with market identification, and working with the U.S. export agencies to provide funding. US/ECRE, under CORECT auspices, has participated in an effort to provide a unified form that U.S. industry can apply for assistance from the Agency for International Development (AID), Export-Import Bank of the United States (Eximbank), Overseas Private Investment Corporation (OPIC), and the Trade Development Program (TDP). An easy-to-read booklet with the enclosed form should be available by the summer of 1991.

The international development banks must be coerced to become more supportive of renwable energy. Because renewable energy and energy efficiency applications are smaller in scale than conventional energy projects, The World Bank and the other international development banks have funded a very small set of non-hydropower renewable energy projects. US/ECRE has forcefully testified before the relevant Congressional Committees that intermediary organizations must be selected to disperse development bank funding for renewable energy projects. Also, new "bundling" techniques to finance many small projects must be adopted. The Global Environmental Fund established by The World Bank, so far, has yet to take the lead in this direction.

While industry has indentified scores of potential projects, and has inroads to financing agencies and banks, renewable energy projects still are less than expected. Because the renewable energy industry is primarily small business, there exists an increasing need for technical and project assistance after the project identification level as a link towards legitimate project financing. To this end, CORECT through support of the U.S. Department of Energy, the Agency for International Development, and the Environmental Protection Agency are funding a unique industry/government partnership called the International Foundation for renewable Energy & Efficiency (IFREE).

The Fund's major purpose is to aggregate federal agency and foundation dollars to provide pre-investment or prefeasibility project financing, to fund assistance non-profits to provide necessary linkages after project identification in order for industry to secure financing, and to provide the international development banks (which are the mainstay of energy development) with experts to incorporate renewable energy in upcoming program planning.

CORECT's involvement in financing is imperative to meet its overall commitment to expand U.S. renewable energy and energy efficiency exports.

S.341 RECOMMENDATIONS

The authorization for CORECT is adequate as long as directives within the authorization include the establishment of generic overseas U.S. indutsry export promotion offices and support of the new project financing mechanism, the International Fund for Renewable Energy & Efficiency (IFREE).

In addition, under Title IV, CORECT's additional duties should not be broadened "to promote more efficient use of fossil fuels". Under the same Title, the joint venture for Renewable Energy & Energy Efficiency Export Training should not be considered as a joint venture. Actual commercial renewable energy projects can be joint-ventured, training cannot be joint ventured but should be supported outright in proven, existing renewable energy training programs through the trade associations, Sandia Design Assistance Center, Florida Solar Energy Center, and Bushland Wind Center.

CONCLUSION

The U.S. renewable energy industry exports over 55 percent of its equipment and services overseas. However, the industry appears to be losing marketshare due to more aggressive programs by our international competitors.

CORECT needs to maintain its industry-driven approach focussed on commercalization. Tendencies to support "soft" programs by non-profits or pure energy efficiency would be foolhardy. A focussed, realistic market approach is mandatory. The CORECT provisions of S.341 are excellent if the aforementioned recommendations are included.

As the attachments indicate, the U.S. could lose the world markets even though we lead technologically in most renewable energy applications. The industry appreciates past Congressional support, and urges that a pragmatic, consistant, industry-driven program be maintained and enhanced.

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ACTIVITIES

Selected CORECT Activities in 1990

Activity	Sponsoring Organization*	Countries Involved
Caribbean Basin Program		
Geothermal Reverse Trade Mission	AID	Central America
Pacific Rim Program		
RE* Plan of Action for American Samoa	DOE, DAC, SERI	Samoa
Advance Team and Project Identification Team site visits	DOC, ECRE	Philippines, Indonesia
PV Training and Support Program	DOE, DAC, DOI	Marshall Islands
Micronesia Energy Conferences	DOI	Pacific Rim
Planning for conference and trade show in 1991	DOC, DOE, ECRE	Pacific Rim
PV for Village Electrification	DOE, DAC, DOI	Marshall Islands
Eastern Europe Program		
Regional Environmental Center for Central and Eastern Europe	EPA	Eastern Europe
Fact-gathering trip to Poland	DOE	Poland
Financing		
Directory of Sources of Feasibility Study Funding	CORECT	USA
Financing of Energy Services for Small-Scale Energy Users Project	DOE, World Bank	Southeast Asia
Study of avoided costs for power from bagasse	AID	Guatemala
Review of energy-related World Bank projects	Treasury	Worldwide
Draft assessment of lending priorities of multilateral development banks	EPA	Worldwide
One-Step Application form	EXIM	Worldwide
Brochure describing each agency's process for financial aid	EXIM/ECRE	Worldwide
Tied Aid funds available ($500M)	EXIM/AID	4 Asian countries
Increased RE involvement (goal of 5% of projects; made 10%)	EXIM	Worldwide
Environmental Investment Fund (total $100M; $40M committed)	OPIC	Worldwide
Review of World Bank country reports	ECRE	Worldwide
Eastern European Investment Fund (total $200M; $50M committed)	OPIC	Worldwide
Delegate to Helsinki Award talks	ECRE, DOC	Worldwide
Education		
Lecture on RE technologies for International Atomic Energy Association	DAC	10 countries
Participating Agency Service Agreement for PV	DAC, AID	India
Wind Energy Symposium at World Bank	AID	Worldwide
4-week PV Training Course	AID	9 countries
Renewable energy exhibits at 5 conferences around the U.S.	DAC	U.S.
Wind Energy Applications and Training Symposium	AWEA	Worldwide
Cooperative Agreement on Education and and Training Strategy	AID/ECRE	Worldwide
Environment		
Intergovernmental Panel on Climate Change	EPA	Worldwide
Case studies of energy use and CO_2 emissions in less developed countries	EPA	Worldwide
International Environmental Technology Transfer Advisory Board	EPA	Worldwide

*Please see p. 15 for definitions

ACTIVITIES

Activity	Sponsoring Organization*	Countries Involved
General Marketing		
Market analysis of solar thermal technology potential	SEIA	North Africa
Integrated Electric Utility Project—Model Utility Task	DOE	Worldwide
Wind Reverse Trade Mission	AID, TDP, AWEA	Worldwide
Wind Trade Mission	AWEA	Egypt, Pakistan
Development of program for sale of small-scale renewables	AID	Dominican Republic, Philippines
Strategy for promoting RE projects	USIA	Worldwide
Organization of PVO* support group for PV	DAC, SEIA	Worldwide
Export EXPO '90 Trade Show, Seattle	SBA	Worldwide
Biomass Energy Systems and Technology Project	AID	7 countries
Formation of Geothermal Export Trading Company	DOE, NGA	Worldwide
Opportunity identification trip	DAC, DOE	Congo, Mali
Technical Assistance		
Presentation to government on ethanol potential	AID	Swaziland
Pricing study for using sugarcane residues for power	AID	Guatemala
Survey of national potential for sugar and palm oil residues	AID	Indonesia
Field trials of equipment for power from sugar wastes	AID	Thailand
Assessment of commercial biofuels potential	AID	Tamil Nadu (India)
Feasibility study of small hydro	AID	Costa Rica
Prefeasibility study of small hydro	AID	Indonesia
Prefeasibility study for power from wood waste	AID	Honduras
Prefeasibility study on biomass project	OPIC, AID	Jamaica
Prefeasibility study on geothermal project	DOE, AID	Kenya
Project identification trip to West Africa	DOE, DAC	Congo, Mali
Communications satellite to help PVO's RE equipment	ECRE	Worldwide
Support for small-scale renewable energy use in the Pacific Islands	DOI, DAC	Pacific Basin
Evaluating RE projects to use oil overcharge funds	DAC	Texas, Florida
Village electrification in Boquillas	DAC	Mexico
Agricultural water pumping project	DAC	Virgin Islands
Water disinfecting field tests	DAC	Honduras
Telecommunications project for highway department and national forest	DAC	New Mexico
Renewable Energy Field Testing Program	AID	Egypt
Program to accelerate commercial energy research	AID	India
PV systems in health clinic	AID	Morocco
PV and solar thermal campground projects for national forest	DAC	Arizona
PV lighting system for national forest	DAC	New Mexico
Geothermal private power site development	DOE, EXIM, AID, NGA	Philippines
Evaluation of geothermal potential	DOE, NGA, AID	Kenya
Awards		
Sandia Award for Excellence	DAC	USA
Federal Laboratory Consortium Technology Transfer Award	DAC	USA

* Please see p. 15 for definitions

Selected 1989 Activities of CORECT

Activity	Sponsoring Organization	Countries Involved
Caribbean Basin Program		
Geothermal Trade Mission	NGA, DOE	4 Caribbean countries
Renewable Energy in the Americas conference	CORECT, ECRE, DOC	Latin America
Bagasse-fired private power generation	AID, IADB	Costa Rica
Water disinfection equipment testing	DAC, PAHO	Latin America
Biomass cogeneration projects	DOE, OPIC	Costa Rica, Jamaica
Renewable energy plan for Virgin Islands	DAC, SERI	Virgin Islands
Small hydro projects	AID, TDP	Costa Rica
Pacific Rim Program		
Workshop on Integrated Electric Utility Project	ECRE	Saipan
Renewable energy plan for American Samoa	DAC, DOE	Samoa
Workshop on Private Financing (Philippines)	ECRE	Pacific Rim
State & Federal Programs		
PV for Government Agencies publication	DAC	USA
SOLTECH 89 conference	DAC, SEIA, SERI	USA
Renewable energy for Alaskan villages project	DAC	USA
PV for Federal Aviation Administration project	DAC	USA
PV for Air Force bases project	DAC	USA
PV for National Forest Service project	DAC	USA
PV for Missouri, Kansas, Arkansas, Texas, New Mexico, and other states	DAC	USA
PV for Navajo Nation project	DAC	USA
PV for Hopi Foundation project	DAC	USA
Financing		
Private investment bank formation	OPIC	Worldwide
Private Financing for the Power Sector publication	ECRE	Worldwide
Energy Spending by World Bank,IADB publication	ECRE	Worldwide
Small-scale/Household Financing project	DOE, World Bank	Worldwide
Multi-Agency Group on Power Sector Innovation	AID, World Bank, etc.	Worldwide
Report to Congress on Tied-Aid Practices	EXIM	Worldwide
General Training		
Training program design	AID	Worldwide
General Marketing		
Implementation Plan for Integrated Electric Utility Project	CORECT et al	Worldwide
Report on renewable-related RFPs from World Bank, etc.	ECRE, Mass. PV	Worldwide
Vaccine Refrigeration Guidebook publication	AID	Worldwide
Renewable Energy Private Power Project	CORECT et al.	Worldwide
Photovoltaics for Vaccine Refrigeration publication	DAC	Worldwide
Wind Energy Applications & Training symposium	AWEA	14 countries
General Technical Assistance Projects:		
India		
Rice-straw cogeneration	AID	India
Small hydro projects	AID	India
Alternative Energy Resources Development Project	AID	India
Other Developing Countries		
Large-scale charcoal manufacturing	AID, World Bank	Madagascar
Small hydro projects	AID, TDP, World Bank	Pakistan, Madagascar
Geothermal project	AID	Kenya
Wind water-pumping project	AID	Morocco
Field tests of wind generators	AID	Egypt
Renewable Energy Field Testing Program	AID	Egypt
PV module assembly project	DOE, OPIC	Mali
General Publications		
AID Office of Energy Program Plan	AID	Worldwide
CORECT 1988 Annual Report	SERI, DOE	Worldwide
Awards		
Federal Energy Efficiency Award	DAC	USA

Senator WIRTH. Thank you very much, Mr. Sklar.

Let me ask you, or start by asking maybe Mr. Helland, just as general information: How big is the current U.S. effort, not Government effort but overall private sector effort, in the export of renewable and energy efficiency technology? What kind of a market are we talking about out there?

Mr. HELLAND. Let me ask Ron Bowes to answer that question.

Senator WIRTH. Do any of the others of you know? How big are we talking about, a $50 million market, a $500 million market? What are we talking about?

Ms. BLEVISS. In terms of potential overseas?

Senator WIRTH. No, what is it now?

Mr. BOWES. Well, as of 1989—and Mr. Sklar could possibly help me—I believe the export market was something like $450 million on the renewable side alone, U.S. renewables exports.

Senator WIRTH. So 1989 was $450 million in renewables. And how much in energy efficiency technologies?

Mr. BOWES. There is no such figure for efficiency technologies.

Ms. BLEVISS. There has been no review or anything. I know DOE has been trying to get those numbers and they have asked us as well. There is no way of running it down, again, because they do not slot in very easily. You have to find out how many of the refrigerator sales were energy efficiency refrigerators, for example.

Mr. SKLAR. And you do not always know where they end up; I mean, tracking where appliances go.

Senator WIRTH. How big is this market by the year 2000?

Mr. SKLAR. We believe on the renewable side and certain kinds of energy efficiency applications, like energy efficient lighting, we think it is somewhere about $8 billion.

Senator WIRTH. So what you believe, Mr. Sklar, is that there is a potential of a 16 times growth in this market over the next decade, is that it?

Mr. SKLAR. Just for an example——

Senator WIRTH. Does that sound right? I mean, I have no idea.

Mr. BOWES. Well, it could certainly be right. We are currently looking at Eastern Europe and have no idea what that potential might be. I think Mr. Sklar has a much better handle on the Caribbean and the Pacific.

Mr. SKLAR. Just to make a response, just photovoltaics alone have been growing 35 percent a year, and those have been in all the Third World markets.

Ms. BLEVISS. If I could just add, I think there is no good number on the energy efficiency side, but it is clear that there has been a real change around in a lot of governments as to their interest in energy efficiency products.

Senator WIRTH. How big do you think it is, Ms. Bleviss, in energy efficiency today and in the year 2000?

Ms. BLEVISS. Well, today I daresay——

Senator WIRTH. I mean, to fill in the blank, what do you say?

Ms. BLEVISS. I would say it is less than $100 million at this point.

Senator WIRTH. And what would it be in 10 years?

Ms. BLEVISS. I would say that in 10 years there certainly is the potential to exceed the $8 billion estimate.

Senator WIRTH. What kind of market is renewable energy for the Japanese? How much are they exporting today and what are they projecting?

[No response.]

Senator WIRTH. Are they the major competitor in renewable technologies, Mr. Sklar?

Mr. SKLAR. The Japanese, the Germans, the Danes, the Italians——

Mr. HELLAND. The French.

Mr. SKLAR [continuing]. And the French are our biggest.

Senator WIRTH. Do you have any idea what the numbers are for their export markets?

Mr. HELLAND. Can you identify those by the various elements of renewables, or all across the board?

Mr. SKLAR. Well, for instance, the Danes are the leaders, the Danes and the Dutch, in wind technology, for instance, and now they control 80 percent of the world market share, mostly because we have let it go away.

In photovoltaics, the Germans and the Japanese are major competitors, though Italians and French are coming on. In biomass you find the Swedes, the Germans, and the Japanese coming.

Senator WIRTH. What are the numbers we are talking about? The overall renewable energy export of the United States today you are suggesting is $400 million to $500 million. What are the Germans doing in photovoltaics?

Mr. SKLAR. I think we barely hold 50 percent of world market share in aggregate of all renewables.

Senator WIRTH. In all renewables?

Mr. SKLAR. Yes.

Senator WIRTH. The United States may currently have 50 percent market share in all renewables? Does that sound right to the rest of you?

Mr. TUGWELL. Yes.

Senator WIRTH. Now, what has happened to that share in the last 5 years?

Mr. SKLAR. It has dropped by, depending on whose figures you go to, from 18 to 30 percent, some due to the fact that the market is just growing, but most due to the fact that we have one major barrier that Frank alluded to before, that we have not been able to get our financing act together, and it is very hard. Even if you have the best car in the world, if you cannot finance it properly no one will buy it.

And that is part of our problem, and it is endemic to the entire trade issue, not just renewables, in this country.

Mr. TUGWELL. Senator, it is very important to disaggregate this market, and there are some fuzzy lines here. Renewables include very large hydro, so when you look at the world picture do you want to include 75 megawatt dams or do you want to limit it to smaller ones? It is a fairly complicated picture.

But in general, I am in agreement with Scott.

Senator WIRTH. Well, I would assume that that $450 million is not including large exports of equipment to build dams; is that right?

Mr. TUGWELL. Yes, right. First of all, much of the dams are local, local anyway. It is the turbines and technical equipment in them that is exported.

Senator WIRTH. Having established that there is a large market out there and that presumably what we want to do is to encourage American industry to be able to get in and take advantage of that market—is that not right, Mr. Berg?

Mr. BERG. Yes.

Senator WIRTH. That is what we are trying to do here—trying to do good by the globe and the future at the same time. We sort of have these dual tracks going along.

Now, does your office get overwhelmed by also having the responsibility for exporting, say, oil drilling equipment and that sort of thing? Does the dog dominate your office so much that it is hard to pay attention to the little guys?

Mr. HELLAND. Let me explain my office, which is a new office within the Department of Energy. The Department of Energy is traditionally a very technically oriented operation. CORECT has been operating in the conservation and renewables area, and clean coal technology in the fossil area.

Most DOE people are by technicians, engineers and scientists. They do a superb job of it. We obviously want to get these technologies into the hands of users around the world. What I do and what my vast staff of currently four people do is apply a marketing thrust. So the work continues to be done in the consumable and renewable area and I am providing direction to it.

Currently right now, quite honestly, Kuwaiti wells are dominating just about this entire Government, I think. Apart from that, why, the work, probably at least a third of the work in this office will pertain to CORECT. CORECT has its own full-time staff director and other people involved in that area.

Would you like to comment on that, Ron?

[No response.]

Senator WIRTH. So then the second issue that we are talking about here is, assuming that this is an important market issue, one, how do we organize ourselves to better take advantage of this?

And I know that you get sanitized on the way to the Hill, Mr. Helland, in terms of what you can say and what you can do. One of the things that we are asking from you all is your input on the provisions that are in the legislation that I have offered, Senator Johnston's legislation, and others, to beef this effort up.

Obviously, we do not want to create enormous bureaucracies, but we do want to create the capacity to better facilitate and to really assist, whether it is in having conferences and trade missions or providing information and so on. Those are the issues that we are looking at.

We have proposed, Mr. Tugwell, a quite significant shift in the authorization. I think it is multiplying it by four or five times, as you know.

Mr. TUGWELL. Yes.

Senator WIRTH. Is that too much? Everybody always wants to spend the taxpayers' money, I understand that. But is that about right? Is that too much? Can it not be absorbed? What is your feeling?

Mr. TUGWELL. I have to be diplomatic on this one, because we think that CORECT has done an awful lot of good for this industry. The coordination activities have been important. The collaboration with ECRE has been important. And we feel that the informational gap has been significantly reduced.

Whether or not a sum this large can be utilized effectively by CORECT so quickly, I cannot tell.

Senator WIRTH. Do you think it should be separate? Should there be a separate or more targeted entity, so that we do not run into the "dominated by Kuwait" kinds of problems?

Mr. TUGWELL. Well, my feeling is that CORECT has been a wonderful coordinating institution, constantly in contact with the other agencies. We have watched it with AID, although from the outside. And I think it would be an effective way to channel Department of Energy funds into the range of activities that we are talking about.

Certainly I would suspect- and this is my personal opinion—I would suspect that a significant increase in CORECT's funds for the kinds of things that Scott Sklar has been talking about would definitely make sense. In general, we support that.

Senator WIRTH. Should we build energy efficiency into what Mr. Helland is doing? You currently do not have a capability or a charter for energy efficiency, is that correct?

Mr. HELLAND. We do not have a charter for energy efficiency, although, as Scott points out, that is an inherent part of any renewable energy technology, and as such yes, we do. But in terms of going out and worrying about the efficiency of an exported refrigerator—no, we do not do that.

Senator WIRTH. We probably ought to do more on that front is what you are saying, if the market is as big as Ms. Bleviss says and as important?

Mr. HELLAND. No, I would not include generic energy efficiency within CORECT, the reason being that suppliers of those goods are not the same ones that supply renewable energy technology. The customers are not the same, the markets may or may not be the same.

That is not to say that an interagency group similar to CORECT directed at energy efficiency might not be a good idea. That is a different topic. But I would not include it in CORECT, for the same reason I would not include clean coal technology within CORECT. It is a different animal.

Senator WIRTH. Where does that then belong? If CORECT does not do it, who does it?

Mr. HELLAND. Well, you may have to come up with a clone of CORECT. Currently within the clean coal technology program, with which I am also involved, there just is not a need for a facilitating agency. If we need to work with the Department of Commerce, we get on the telephone and say, I am coming over to talk to you. And we go over and talk to them.

We have lined up a trade show with the Department of Commerce next year in Prague, because that happens to be what makes sense for us. We do not have a formal structure to do it. We just get up and do it. The companies tend to be larger and do not need the same degree of help in finding their way through the Government, as they do in CORECT technologies.

Senator WIRTH. Ms. Bleviss or Mr. Sklar, do you have any reaction to that funding and organizational issue?

Mr. SKLAR. Our experience with CORECT, even with a little bit of money, has been very good. As a facilitating agency, it has, frankly, leveraged money from other agencies that would have not been there before, and that is really the key part of this, is that what little money there ought to be—the real key part of this is the little funding of CORECT can be used to challenge other agencies to put money in. And in fact, AID, Trade Development Program, OPIC, Ex-Im Bank, they have all received that challenge.

It is clear, though, that our intent in the industry wants DOE to have an office of CORECT that focuses on our industry's problems, and our industry has real problems.

The last issue I would like to point out is appliances. I believe that energy efficiency has great potential and some of the industry associations, like the Air Conditioning and Refrigeration Institute and NAESCO, are beginning to understand what they need and work in the process.

But it has to be an industry-driven process. The Government cannot go to industry and say, we will do it for you. The industry has to come to Government and advise them how to do it.

Senator WIRTH. Well, as you know, Mr. Sklar, and I think you all know, Mr. Helland, we have proposed a variety of initiatives which are a little bolder than have been suggested, at least in the final DOE document. I do not know internally what you all have been suggesting that we do.

It might be useful to get your response back to us as to what is in the legislation. I would not ask you at this point to do so, but I would like to get a Department reaction to this.

We are going to be, as you know, moving toward a markup. We do a number of things in this legislation. We expand the range of products and technologies covered under CORECT to include energy efficiency, and we have talked a little bit about that. We establish outreach offices similar to what Ms. Bleviss was suggesting we do, outreach offices in the Pacific Rim and in the Caribbean. We establish joint ventures with U.S. manufacturers for applications in key lesser developed countries, and I think you were suggesting that, Scott.

And we increase the authorization, maybe too much—I do not know—to do all of these things from $3 million to about $14 million. Currently there is a $3 million authorization for CORECT, I believe, but it is funded at a little more than $1 million.

So it is a more ambitious program. Maybe we should be doing other things to that. That is one of the things we would like to hear from all of you. We thought this was the best that—having talked to you all in the process of drafting this legislation and talked to Senators Gore and Hatfield, who have been very interested in this as well, Senator Johnston and I came up with this construct.

Now, maybe it is the right one, maybe it is not. But we would certainly like to hear back from you if we might, Mr. Helland, your, the Department's, reaction, the administration's reactions, to those, to that particular construct that we have come up with.

We believe, and I think the numbers are out here, that this is a very important future market for the United States of America, and that we are, as you are suggesting, Scott, threatened with losing that to the Germans and Japanese and others if we do not get with it more aggressively.

Now, Mr. Berg, maybe there are OPIC pieces in here, too. I am not sure that there are. But we would like any reaction you might have as well.

Mr. BERG. I appreciate that and, partly by way as reaction or complementation of what has been said, I would add that, with respect to the energy efficiency industry points, whether or not the mandate or the scope of CORECT is expanded to include that particular industry would not add or detract, really, from our ability to search out and work with and finance projects in that particular industry.

I would say that the example of the light bulb facility in Hungary that was cited earlier is an excellent example of what is going on here. Had we financed that particular project, as Ms. Bleviss said we did but which we in fact did not do, had we financed it, we would have been more intrinsically involved in the structuring of that particular project and, just as we bring environmental concerns to bear and other kinds of things, I think we would certainly have wanted to raise the question of energy efficiency.

Also, had there in fact been a market for that particular kind of product, I think that General Electric, which is without question one of our dominant industry leaders in that area, would long since have searched out that market and would be making those types of products, either in Hungary or perhaps back here.

But the point here is that OPIC and other agencies of the Federal Government that engage in project finance—Export-Import Bank as it relates to exports, TDP as it relates to feasibility studies, AID as it relates to the financial empowerment of the citizens of developing countries to participate in joint ventures—all of us I think stand ready to work with CORECT and with agencies, organizations and industries whose subject matter is not directly involved in the scope of CORECT and bring to bear the financing programs that we have.

Mr. SKLAR. Senator, we would like the opportunity to put in the record the OMB response on OPIC.

Senator WIRTH. We will leave the record open, with no requirement that you respond, but if you do have a response we will leave the record open for that for the next week or so. And we would like to hear from you, Scott.

And particularly, Mr. Helland, we would like to get the administration's view on the construct that is in S. 324 and 341. I think they are very parallel and we would like to get your reaction.

Ms. Bleviss.

Ms. BLEVISS. Senator, I would like to make a couple of comments. The energy efficiency industry is quite different in some ways from the renewables industry, there is no doubt about it. On the other hand, there is a lot of commonality, as Scott said. They often go hand in hand.

We are operating on different information exactly on what OPIC is doing, but we operate very heavily in the Asian market and I

can tell you that there is a developing demand for compact fluorescents and we do not see any of the American companies there.

Senator WIRTH. You and Mr. Berg are going to get together after this, we know that.

Ms. BLEVISS. I think that one of the issues that we have to address is that the industry, while in many cases it makes a lot of sense and one would argue that the industry should be seeing the market as it develops, in many cases the industry is very similar to the renewables industry: very young companies or subdivisions of bigger companies that are not given the assets. And in some cases they just have never thought about an export market.

I agree with Scott, it has to be industry-led. But this is a push-pull proposition and there really needs to be some assistance to help the industry organize itself at the same time.

Senator WIRTH. Good. Well, do you all have any final words for the good of the order before we adjourn? Mr. Tugwell?

Mr. TUGWELL. First of all, I want to agree with that. I think that efficiency belongs in CORECT. In our portfolio of small investments that we are looking at, there are efficiency-promoting companies that have very similar characteristics in terms of small businesses for financing and other purposes as renewable energy companies.

Secondly, I would like to stress that in the expansion of CORECT activities—in some respects this reinforces what Scott said—we feel that a field presence, that is people on the ground in developing countries who are in contact with those who own the resources, whether they are biomass or small hydro or whatever, that kind of field presence is essential. And moving CORECT in the direction of supporting that field presence, which is what we are stressing, I think is terribly important.

Senator WIRTH. If we do not do it right, let us know. I mean, if you think you have different ideas how to do it.

Mr. TUGWELL. Right, I will.

And secondly, small finance. We are very strong supporters of OPIC. We think their initiatives to start new funds are very important. But what we are seeing is that very small amounts of money to small projects is often very hard to find. So that is what we are trying to do. We are trying to prepare that ground at the lower level.

And insofar as CORECT can help get small finance, early high-risk finance, to these projects to get going and then move into the ranks of OPIC so they can carry the rest of the weight, that is another thrust that I think would be very useful for CORECT.

Senator WIRTH. Scott.

Mr. SKLAR. I just wanted to say very bluntly, the industry supports your and Senator Johnston's effort on this and commends you for it. This is exactly what we need. Thank you.

Senator WIRTH. Thank you.

Mr. Helland.

Mr. HELLAND. We will be submitting something. I think, in response to some of the comments that were just made, that CORECT needs to get something done. What needs to be done quite often is properly the business of OPIC or of Ex-Im. They are the

people that have to have the money to do it, because CORECT is a coordinating entity.

[The information requested was not received at the time the hearing went to press.]

Senator WIRTH. Well, I thank you all.

I know that AID wants to submit a statement for the record, which will be left open for that.

[The information requested was not received at the time the hearing went to press.]

Senator WIRTH. There is a great deal of interest up here, as you know, Mr. Helland, in this, a belief that we have a responsibility to lead in the United States and that we have a ways to go. And we would really like to make sure that we have as much cooperation and support as possible.

You all have to run the program and I realize your good efforts at DOE, and we continue to have kinds of problems a little further up the line in the administration thinking about energy efficiency and renewables and so on. But we will solve that problem one of these days.

I thank you all very much for being here. I appreciate it, and we look forward to hearing from you. Thank you very much.

[Whereupon, at 3:04 p.m., the hearing was adjourned.]

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